

# **PAUL GEMMILL: RECOLLECTIONS OF MINING VENTURES, LIFE IN EASTERN NEVADA AND THE NEVADA MINING ASSOCIATION**

Interviewee: Paul Gemmill

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## **Description**

Paul Gemmill is a native of California, born in Clearwater in 1907. The family engaged in mining in California, Mexico, and in Lincoln County, Nevada. Gemmill received his education in California and Nevada, graduating from the Mackay School of Mines at the University of Nevada in 1930. He then entered his chosen profession in Lincoln County, Nevada, as a mining engineer and exploration geologist. Working variously as an independent operator and while employed by Combined Metals, Inc., he developed expert knowledge of metals and nonmetallics. Mr. Gemmill became general manager of Combined Metals in 1956, leaving the position to become a consultant in 1962.

One of Mr. Gemmill's important mining ventures was the exploration and development of properties near Tecopa in the Death Valley area; he organized the Shoshone Mines, Inc. as a result of discoveries there.

In 1964, after more than thirty years of active mining and mining engineering, Paul Gemmill accepted a position as executive secretary of the Nevada Mining Association, the trade association for the mining industry.

Mr. Gemmill was a keen observer of his environment. He remembered his professional activities, the day-to-day life of the mining towns, the civic affairs, even the humor of his workmates with clear detail. Researchers who wish to know about the real life of miners and prospectors will find here a fruitful source.



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An Oral History Conducted by Mary Ellen Glass

University of Nevada Oral History Program

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## PREFACE TO THE DIGITAL EDITION

Established in 1964, the University of Nevada Oral History Program (UNOHP) explores the remembered past through rigorous oral history interviewing, creating a record for present and future researchers. The program's collection of primary source oral histories is an important body of information about significant events, people, places, and activities in twentieth and twenty-first century Nevada and the West.

The UNOHP wishes to make the information in its oral histories accessible to a broad range of patrons. To achieve this goal, its transcripts must speak with an intelligible voice. However, no type font contains symbols for physical gestures and vocal modulations which are integral parts of verbal communication. When human speech is represented in print, stripped of these signals, the result can be a morass of seemingly tangled syntax and incomplete sentences—totally verbatim transcripts sometimes verge on incoherence. Therefore, this transcript has been lightly edited.

While taking great pains not to alter meaning in any way, the editor may have removed false starts, redundancies, and the “uhs,” “ahs,” and other noises with which speech is often liberally sprinkled; compressed some passages which, in unaltered form, misrepresent the chronicler's meaning; and relocated some material to place information in its intended context. Laughter is represented with [laughter] at the end of a sentence in which it occurs, and ellipses are used to indicate that a statement has been interrupted or is incomplete...or that there is a pause for dramatic effect.

As with all of our oral histories, while we can vouch for the authenticity of the interviews in the UNOHP collection, we advise readers to keep in mind that these are remembered pasts, and we do not claim that the recollections are entirely free of error. We can state, however, that the transcripts accurately reflect the oral history recordings on which they were based. Accordingly, each transcript should be approached with the

same prudence that the intelligent reader exercises when consulting government records, newspaper accounts, diaries, and other sources of historical information. All statements made here constitute the remembrance or opinions of the individuals who were interviewed, and not the opinions of the UNOHP.

In order to standardize the design of all UNOHP transcripts for the online database, most have been reformatted, a process that was completed in 2012. This document may therefore differ in appearance and pagination from earlier printed versions. Rather than compile entirely new indexes for each volume, the UNOHP has made each transcript fully searchable electronically. If a previous version of this volume existed, its original index has been appended to this document for reference only. A link to the entire catalog can be found online at <http://oralhistory.unr.edu/>.

For more information on the UNOHP or any of its publications, please contact the University of Nevada Oral History Program at Mail Stop 0324, University of Nevada, Reno, NV, 89557-0324 or by calling 775/784-6932.

Alicia Barber  
Director, UNOHP  
July 2012

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## INTRODUCTION

Paul Gemmill is a native of California, born in Clearwater in 1907. The family engaged in mining in California, Mexico, and most importantly in Lincoln County, Nevada. Paul Gemmill received his education in California and Nevada, graduating from the University of Nevada Mackay School of Mines in 1930. He then entered his chosen profession in Lincoln County, as a mining engineer and exploration geologist. Working variously as an independent operator and employed by Combined Metals, Inc., he developed expert knowledge of metals and nonmetallics alike. Mr. Gemmill became general manager of Combined Metals in 1956, leaving the position to become a consultant in 1962.

One of Mr. Gemmill's important mining ventures was the exploration and development of properties near Tecopa in the Death Valley area; he organized the Shoshone Mines, Inc. as a result of discoveries there.

In 1964, after more than thirty years of active mining and mining engineering, Paul Gemmill accepted a position as executive secretary of the Nevada Mining Association,

the trade association for his industry. In this position, he directed the affairs of the Association until his recent retirement.

At all times, Mr. Gemmill was a keen observer of his environment. He remembered with clear detail, not only his own professional activities, but also the day-to-day life of the mining towns, the civic affairs, even the humor of his workmates. Researchers who wish to know about the real life of miners and prospectors will find here a fruitful source.

When invited to participate in the Oral History Project, Paul Gemmill accepted readily. He was a cheerful and hospitable chronicler of his life history through ten taping sessions, all at the office of the Nevada Mining Association between November, 1974 and October, 1975. The rather long time period was caused by Mr. Gemmill's suffering a heart attack in the winter of 1974; he recovered enough to resume taping in July, 1975. Mr. Gemmill's review of his oral history transcript resulted in numerous changes to clarify language and statements, but no revision of the information itself.

The Oral History Project of the University of Nevada-Reno Library preserves the past and the present for future research by tape recording the memoirs of people who have been important participants and observers of the development of Nevada and the West. Resulting transcripts are deposited in the University Libraries at Reno and Las Vegas. Paul Gemmill has generously donated his literary rights in his oral history to the University of Nevada, and has designated the volume as open for research.

Mary Ellen Glass  
University of Nevada-Reno  
1978

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## RECOLLECTION OF MY FAMILY AND OUR EARLY MINING VENTURES

Well, starting with when I had already arrived in 1907, June 28, 1907, the family was living in Clearwater, California, in a little red house down in the salt grass country where my grandparents on both sides had come out to settle. Without going back into my grandparent's background, why, my mother's folks came from the South and had the typical viewpoint about things (of a southerner) and had, along with her parents and others, the attitude of the South toward a lot of things, including the slave problem and everything else. And I might say at this point that she certainly didn't have any bias against the Negro race. She knew that they were mostly uneducated, at the time she knew anything about 'em and her folks knew anything about 'em. You have to relate it to the situation of the background. She felt that the North had been very disruptive in the way they handled this whole situation and that the South was much kinder to the Negro, really; and had been much more sympathetic toward the Negro than developed out of what came later. But,

of course, they did not—at that time—treat them as equals. All right. So that was where she came from. Mother's maiden name was Elizabeth Lewis, and she had brothers John, Andrew and George.

Well, on my father's side, his father was a Scotchman and had a broad brogue that you could hardly understand, and he played the fiddle. And later on he offered to give me the old fiddle that he had bought when he was a young fella. And I ultimately wound up learning to play just enough so that he gave me the fiddle. And I've had a lot of fun with that fiddle. I've still got it. I don't play it very much, unless I get down to the old Pioche house, and we have a party goin' on and play the player piano, and then I can play the fiddle a little bit along with the piano to drown me out. Pump the piano, and play the fiddle, and have everybody singing. So the fiddle that he gave me has been a real good thing to have, and I've had a lot of fun with it.

Well, coming back to my mother. She was a strict Presbyterian and believed very

strongly in her religion, and did what she could to get us kids to grow up and became baptized into the church and so forth, and did what she could to get us to attend. And I wasn't very good at attending, and if I could get out of it, because of a trip into the mountains with my dog and my friends, or something like that, she was pretty liberal and would let me do that. But if you didn't have a good reason, why, you had to go to church when I was a young, little kid. And as we grew up, she started out before we could read, reading to us—a lot. At bedtime, we'd practically all go to sleep while she was reading to us. She never did take on a job for hire at anytime. She spent her whole lifetime, while the family was growing up, tending to the family and doing what she could to train us. She had gone to normal school and learned to be a teacher, which I suppose didn't involve any more than today you'd get going to high school, I suppose, because that's the way they did then; and they didn't really turn out too bad a teacher. She was a good teacher—for us. For instance, it's no credit to me, but it's a credit to her, that although I went through school and never did have enough English grammar to be able to conjugate a sentence (and I hardly know what it means to this day), still I got very good grades in English all the way through, because it's just the way—you know, like you can teach the parrot I guess, to talk. Right?

On the other hand, I might throw in a little comment here; that in high school, I was trying to get through two years of Spanish. It took me three and a half years to get through two years of Spanish because there was too much of it that was taught on the basis of English grammar. And if they'd taught me like the parrot, I'm sure I wouldn't have had any trouble [laughs]. Fortunately, my violin, and my music, and natural ear for music and

everything got me by so I got recommended credits that substituted for the poor credits in Spanish [laughs].

Another thing I might say about my mother, and I think this is very important because it's followed me throughout my lifetime, and I see it more myself now than I did earlier. That is this; she didn't want to hear things that were bad. She preferred to ignore what was bad, unless you can do somethin' about it. If you couldn't do anything about it, you just don't want to think about it. And I relate this now to a lot of the things I see on the television (sometimes I like to call it the "idiot box") where they emphasize so much of what's bad, or a disaster, and all the rest of this stuff that's going on in the world, and I think that maybe a lot of people have already had things to say about that, but it kind of bothers me that in our "one man, one vote" society today, there's so much attention given to that kind of a thing instead of the positive, the constructive kind of thing. Now we'll leave my mother. [Laughs] I've covered, I think, a fair, well, what I consider the important things about what she gave me.

Now, my father, in my early years, I didn't see too much of Dad 'cause he was busy earning a living. There were five in our family. I had a younger brother, John Garrison, and a younger sister, Mary Betty, and I had an older brother, David Lewis and sister, Delia, so that I was right between, in between the bunch. And when I was born, they tell me that my father went out and bumped his head on the windmill, because at that time he had a girl, and then a boy, and he wanted a girl the next time, and I turned out to be a boy [laughs], so he didn't like that. Well, he didn't really hold it against me. I'm not saying that he was—. But I do remember that, you know, as far as us three boys were concerned, he didn't pay much attention to which was which. And lots

of times he'd say, "David—Jack—Paul—go do so and so." He wouldn't know which one he's talkin' to.

Well anyway, my father, David Byrd, and his brother (two brothers), Mark and Jesse, were rather mechanically inclined; and one of 'em—an uncle Jesse that died rather young—was so much interested in machinery and everything, that he built a tractor down in California. I guess it was one of the first gasoline tractors or something—on the farm—and through that kind of experience, why, my father was asked to go out and install a gasoline hoist at a prospect out in the California desert. It's near Cima, California. Of course, he knew enough about the machinery and everything, and put the thing on a foundation. When he got it installed for sinking a little shaft, why, he saw that they needed to know what they were digging out of the hole. So he wrote to my mother and got a book on assaying so that he could run slop coppers. And from that, plus his mechanical background, all of this, I guess, while I was a baby, or it probably was before I was born 'cause by the time I came along, he was already a mining engineer. He didn't have any college or any training as such, but by the time he knew how to install a gasoline hoist and run slop coppers, you know, he was a mining engineer [laughs], in those days. They didn't graduate very many of 'em, and so when that experience was over, I think it qualified him for being asked to go down to Old Mexico and take over an operation of an English company at a silver mine.

Actually, there were two different silver mines and two different sojourns to Mexico, and I haven't those spelled out. Somewhere, I looked for my father's resume of his life experiences, which wasn't very long, but it would have given that, but it didn't matter.\* It was on one of the trips down there on a ten-

day mule-back ride into the back country from the railroad that I think my first recollections come (although I do have a dim recollection of playing with frogs in a washtub out in the yard, and I believe it was at the little red house, but I'm not sure). But down in Mexico then, they tell me that I learned to talk Mexican before I did English, playing with the Mexican kids. Didn't do me any good later, because when I came back to the United States they tell me that I wouldn't listen because I thought it was baby talk or something. My first recollection, I think, in Mexico was a water flume coming down from the mill and probably carrying the tailings down for disposal, and the flume was leaking water.

I remember that my uncle, Mark, was down there briefly, and I remember a story or two on my older brother, who's real good, was a real good story teller. (He's dead now, David.) There was an accident at the mine of some kind, and a Mexican was killed. And it made such an impression when my brother David—a little tyke—went running to Joe Askew (one of the characters that was helping my father around there, from Texas) and told him about the accident. Joe listened attentively, and went to get something to go over and help out on account of this accident. And Dave saw that it made such an impression that he followed it immediately with, "and then after that happened, why, my uncle fell down the shaft and he got killed, too." Well, Joe, of course, recognized it. He said, "Young man," he said, "you've overbet your hand!" And then he doubted whether the accident had happened. [Chuckles] Well anyway, it's just one of those little things that I remember about that area.

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\*Copy in Special Collections  
Department, UNR Library



And another story from that time is that they had a Chinese cook in camp. And this, of course, I don't remember because I was too young. But I remember the story very well, and I think it's a good one to relate. This Chinese cook was a pretty good cook, and he served wonderful meat pie. And so there was meat pie, and then a few days later, meat pie again. And about the third time, you know, they thought this was pretty good meat pie. And when too much time passed, and they asked him, what about some more of that meat pie? Well, he says, "Missy Gemmill! No more puppy, no more pie." [Laughs] Then they knew what had happened to the pups. So I guess I've eaten dog before. [Laughs]

Anyway, the next thing (the thing I do remember other than the flume coming from the mill) was apparently on the way out on this ten-day mule-back ride, they had a box, they told me, that they put on a mule, and I rode in this box on the back of the mule. And as the mule walked along, part of the time I'd sleep, and they were afraid I was gonna wobble my head off. But anyway, we camped overnight along the trail, and I remember very distinctly—I have a good, clear picture of a phonograph under the pine trees with this big horn, you know, playing the music in the evenings. So apparently we camped in the evening with the phonograph playing, and I guess the folks were havin' a ball. And we came out of Mexico. I suppose Dad might have stayed in Mexico on other operations, except that the revolution broke out, you know, and that's the reason he left.

When he came back to California and started lookin' into what he'd do next, why, mining apparently was kind of dull—and this must have been when I was oh, I guess, under five or somethin' like that—and so he happened to know a man by the name of J. D. Thompson in Pasadena that had an

interest in things in Lincoln County. I guess, if I recall correctly (and I could be mistaken on this), I think it was the same Thompson that had an interest in the Geyser ranch and in the Cal Neva Mining Company, which'll show up much later down the line. But his interest in the Geyser ranch, and my father's acquaintance with him for some reason—I think maybe he was the man that got my father, you know, introduced my father for goin' down to Mexico, but I don't know. It may have been that, or it may have been a cousin of my father's. But anyway, Thompson had this interest in the Geyser ranch and had made some kind of a deal. And he put my father in on it. And my father, on account of mining being kind of dull (but his background in farming, too, from the salt grass southern California country), why, he went out as a partner, in some manner or other, to the Geyser ranch, which is between Pioche and Ely on the county line, Lincoln and White Pine County line. We were there then, and we lived in a two story ranch house. And my father in the course of running the ranch, selling pigs and livestock, you know, going to Ely and so forth, I think at first driving a team of horses, and then later on he bought one of the first Ford automobiles, I think, that Roy Orr ever sold. My father bought one, and Mr. Thompson bought one—the first two Ford automobiles that were bought through Roy Orr in Pioche, Nevada—while we were at Geyser ranch.

And we weren't there too long. I don't know whether it was a year and a half or something. Anyway, I know that we were there at least through one full winter and into another, because it was on Christmas Eve that we were all in the living room of the house. My father was away down in Los Angeles somewhere. I think at that time the decision was being made to sell out at the



Geyser ranch, in some kind of a deal. And so he was away from home on Christmas Eve. And I smelled smoke. We were sitting in front of the fireplace, and I guess preparatory for Christmas and so forth—probably had our stockings hung up. And I smelled smoke. They tell me I kind of lisped; and they used to make me say, “Thome people thay I lithp, but I can’t pertheive it till I go to thay thoap.” [Laughs] Well anyway, when I smelled smoke, I told my mother; I said, “Mom, I thmell thmoke!” And so she jumped up to see where it was coming from. She went over and down the hallway, and the smoke was billowing out from cracks around the door from the room where my younger brother was in his crib. She opened the door, and it was full of smoke, dense smoke. She went over to the crib, and it was a metal bed of some kind—baby’s bed—and when she felt the metal, it was hot. She grabbed him out of the bed and ran down the hall out of the house. And the whole thing burst into flames in the bedroom. Nobody knows how it ever started, and the flames came out the door, went down the hall, rolled back over the roof, and within twenty minutes, they tell me, that house was practically burned to the ground. Nobody got hurt. We just lost everything we had. Well, my Uncle Mark had moved out there, was living in a log cabin that’s still there at Geyser ranch, a little ways from the old house, and he rushed over, of course. He managed to get in through a window into the room that my father had his office and things, because he thought there was some important papers and things that should be saved—the first thing he thought of. So he grabbed this desk and threw it out through the window, but it was too late to do much of anything else. And hell, it didn’t have much of anything in it. So we came out of that losing everything—piano, and clothes, and everything—and had to stay, everybody in

this log cabin. Well, when my father got back, we moved to Pioche. I guess he had made the deal on the ranch, and we were out of that.

But, while he was at the ranch, he had gotten well acquainted with some people in Ely—that is, leaders in Ely—including Mr. [C. B.] Lakenan, who was then the general manager of the Nevada Consolidated Mining and Smelting Company, or whatever the name was at that time—now the Kennecott operation. On account of my father’s mining experience, they had gotten to be kinda friends while my father was at the ranch. So father was invited to come up, because they were converting the whole operation from gravity separation into flotation. Dad was invited to come up and work in the laboratory, and learn about flotation as an assistant in the laboratories; and I guess they were even putting some of this to work in the plant by that time. We got established in Pioche in a house there, where my younger sister Betty was born, and where my younger brother Jack was coming out of a very serious lung problem that came from this smoke. He had bronchitis for a long time, and the folks tell me that I was not very good to him ‘cause I’d tease him, you know. But, I can’t help that. Maybe it’s in my nature to tease people. [Laughs] And if it is, it’s not on purpose, it’s probably an instinct [laughs].

Anyway, from that experience, with flotation in mineral concentration, my father made the decision to go out and see what he could do in applying flotation somewhere. Now he must have had a little bit of money from the Geyser ranch deal or something, because he had enough apparently to travel on and to have the wild idea that he could do somethin’ all on his own, you know? Well, he tried a place or two and some experiments that didn’t work. Finally, he happened to go through Prescott, Arizona and was looking,

inquiring around about where something might be done, and someone introduced him to a man that had a deal on the old Crown King mine, and this was at Crown King, Arizona, high in the Bradshaw Mountains above Prescott.

And this man's name was Randolph, and he was an Army officer (had been), and he'd been playing around trying to do something with the gravity mill tailings from this Crown King mine. Well, it happened that these tailings contained rather clean sulfide minerals in quartz and rather coarsely crystalline and so forth. They had operated a mill there; and what process, I don't know, but it must have been gravity and possibly some amalgamation. But anyway, it was an old style mill, and the tailings ran real good in zinc and some lead and copper, and of course, had residual quantities of gold and silver. So, the total value in those tailings looked pretty good to my father. So he went up to the old Crown King camp, and at that time, there was a railroad into camp—it had been a good producer, the camp had. This railroad went up ten switchbacks up the side of the Bradshaw Mountains to get there. And I think on practically all of these switchbacks there was a big, high wood trestle that the train would go over, see. And I remember that very distinctly.

The experiments he conducted up at Crown King, using hydraulic power to run a little flotation cell, or a compressor to make air for a flotation cell. The cells at that time were called callow cells, and they pumped air into them through a canvas blanket; instead of being mechanical cells, you aerated the pulp with bubbles through a blanket at the bottom of the cell. Anyway, he decided that through the use of different kinds of oils and so forth, he could make two different concentrates: one that would run high enough in zinc to sell,

and the other would be sold at the Haciempa Smelter, which was a lead-copper, or copper smelter, I guess. I don't know whether it was lead smelter or copper smelter or whatnot. But at any rate, it would accept the concentrate that carried copper, and lead, and gold, and silver primarily, while the zinc concentrate would go somewhere else probably. I don't know whether it was Oklahoma or Texas or where.

But anyway, at this time, things were stirring up in the World War I situation. And I can't tell ya exactly what year, the dates of this, but anyway, the price of zinc was high. I think above twenty cents. In today's language that would be way above the present price of zinc, of course. It'd be like having dollar a pound zinc today, at least. And the processors, the guideline that he had to follow was to make at least a forty percent zinc concentrate to sell his zinc concentrate, which was a key to making this thing successful.

Well, again he went to the book and learned how to assay for zinc. And he ran his own assays. And then when he and Randolph needed money to alter the mill, they had to build their own flotation cells. I think he infringed on a patent in order to do it, but nobody stopped him. He was just a guy playing around on the sidelines. So he built cells out of wood and had castings made to stretch the blanket over. I don't know where they got a compressor, a blower I mean, to aerate the cells. And they did alter the mill for the very small sum of \$2500; and they borrowed this— he and Randolph—in joint venture with a man by the name of Viele, I think it is, who was the president of the Arizona Power Company. And Viele couldn't believe that anybody could make a mine, or anything in a mine business, go with \$2500, but he went on the note—all three of 'em on the note at the bank, to borrow \$2500. They

didn't quite make it, and the winter hit 'em, and they had to go and get another \$500 or something (maybe it was \$1,000), but anyway, it was a very modest amount of money to put this thing into operation. And they started producing concentrate.

My father assayed the concentrate. They had a carload ready to go, and he assayed it, and he got forty-two and a half percent zinc or somethin' like this. And of course, that was not very much over what it had to be, so he took the samples down to the assayer in Prescott. And the assayer in Prescott didn't give him forty percent. He gave him somethin' under forty percent, but complimented him on making such a high grade concentrate. A lot of people had tried it and failed. He was very much depressed, so he went back and reassayed this thing, and resampled and reassayed, and still came up with about the same result. So he took the pulp (or sent it, I don't know) to Phoenix to an umpire assayer, who came up with the same thing he did. And so he faced the first assayer with this Phoenix result; and the Prescott assayer said, (he knew Dad pretty well by that time), he said, "Well, Dave, he said, "I just didn't want you to be foolin' yourself." He said, "I thought you probably were, you know, givin' me the best of it when you gave me the sample- So I just had to discount that a little. I didn't want you fooling yourself. [Laughs] So anyway, the carload was shipped, and it came out all right, and the venture was a success.

### GRAMMAR AND HIGH SCHOOL

Well, as for my experiences in Crown King, I was goin' to school there. And in the course of events (and I can't tell you exactly how long we were there, but I guess it was until, you know, the war was over), my father was instrumental—he and Randolph

and Viele— they put in a tramway up to the Wildflower mine, had a superintendent running the Wildflower mine that was a very good man. And he was a Finlander; and he brought Finlanders to be miners, and they did a very good job mining. I think the whole venture at the Wildflower, however, was a non-paying proposition. The tailings were where they made the real money. They also tried a little venture up at the Tiger mine.

And I remember we moved up to the Tiger for a little while during the summer, when I had to walk to Crown King for my violin lessons. And my brother had to see that I got over there, and I think that most of the time instead of walking, he'd walk, but I was riding a burro, and he had to walk along behind the burro to make the burro go [laughs]. And I remember that very well.

We enjoyed playin' around with the Mexican kids there (in Crown King) and everything. All the kids had B-B guns there. And I remember one time, a very distinct picture in my mind, of the old, eighty-year old white-headed carpenter, a big husky fella, bending over, building one of these flotation cells or something else. Anyway, he was a millwright, bending over his work with his pants stretched real tight, and one of the kids was poppin' him in the seat of the pants with a B-B gun from behind the bushes [laughs], and he'd straighten up and slap himself, wondering what had happened. I don't know what came of that. But anyway, and I remember the kids playin' around with dynamite caps and blowin' tin cans, which kids'll do you know, if you don't keep 'em out of sight. So you gotta look, watch, or kids'll get in trouble.

Well, we left Crown King then, and went to Pasadena. I'm not sure, I think my father had bought a house in Altadena when he left Geyser ranch—yes, he must have, because, see, I went to [school there] after the first

grade. When we went to Altadena from Geyser ranch—well, we had a short sojourn over in southern Utah with my grandparents for a while near Lund during the summer, I think, where they were tryin' to raise peanuts over there on a short stay in some kind of a—I don't know whether it was a Desert Entry, I guess they didn't have Desert Entries then—but anyway, they took up a little land under whatever law was applicable and tried out a little venture there that they soon left. They were really from California and went back to California. But we were over there for a short while, and then I think that's where my father got the place in Altadena and probably was the time when he was getting things going up at Crown King. So afterward, after he got things going up there, was when we actually moved up there [to Crown King], and I remember going up on the train, and getting out in Crown King when there was about two feet of snow—on this train up this switchback and everything. And then we went back, after the Crown King experience, we went down back to Altadena, and I, of course, went back to school there. And in Crown King, I must have been around nine years old or so during the time that the family was out there, somewhere along in that time.

We went back to Altadena, and I finished grade school in Altadena, going to the Altadena grade school. In the meantime, my father—we're really on the subject of my father, at the present time, filling in with me too, I guess—but my father was looking for the next thing to do after Crown King, and the Pittman Act was on, the Silver Purchase Act passed by Key Pittman. A dollar an ounce for silver was still applicable, and mining people generally (or at least my father) believed that this was here to stay and so he went to Calico, California—an old famous silver camp. (The story goes, they had ten thousand Chinese

in camp there at one time or something. I believe it was one of the camps that was operated by the Chinese that were imported to build railroads. And when some of these railroads got built, why, then there were lots of people; and these Chinese were pretty good, I guess, chloride miners and so forth, and their time wasn't worth much, and the old camp of Calico had been largely operated with Chinese help.) Well, he sampled up some of the stope fills and so forth and decided that he would build—of course, he was familiar with cyanide because the Mexican experience was cyaniding of silver ore by leaching process. This was heap leaching really. It was where the Mexican help would stack the ore into tanks, lightly, so that the fluid could penetrate through the ore and leach the silver out and then the Mexican help would muck the tanks out, you see. Well anyway, I think he built a more sophisticated plant at Calico, where he had some counter current tanks and so forth; although I can't really tell you too much about it. I worked there one summer as a water boy. It was awful hot summer. My older brother and I were both helpin' there during school vacations that summer. [Just] when he got it all put together and started turning out bullion, (I remember the first bullion seeing it be poured into sort of a wash basin really, and it was the shape of a wash basin), the Pittman Act went off. So the bottom dropped out of the prices, so then he lost whatever he'd put in, which was, I guess, his principal assets, other than maybe what he had in the house in Altadena. He'd made some pretty good money at Crown King, and so I guess he was still able to move.

His next move was up to Baldwin Lake and a gold mine up there where there was already a forty-stamp mill, and some people that owned it wanted to sell it. I think at that point he got acquainted with Howard Squires,

and it was through Howard Squires or their combination—anyway, they went up there and tried to take this on and pay for the mine out of its own production and so forth. That's up near Big Bear Lake in the mountains east of San Bernardino. And it was an open pit sort of a gold mine, but run, more or less, using a millhole method. In other words, an adit driven under the pit, and then you mine the ore and drop it down a raise, and pull it out, and ore went to this forty-stamp mill. This turned out to be a failure. And low ore grade was the same reason that they had an opportunity to try. Whoever'd run it before hadn't made it go. Gold then was \$20.67 an ounce, and they did produce some bullion, but they couldn't make the stiff payments they had to make, and so they walked away from that.

The next phase was, I may have this a little out of order, but my father also went into the graphite business in southern California in San Francisquito Canyon mining graphite. Because out of his flotation experience he'd been called on as a consultant to go back to the South—the southern states somewhere—and advise on installing flotation graphite plants—on at least a couple of trips, I don't know. And through that he got acquainted with graphite and heard something about the graphite business, thinking maybe these deposits in California would be a good thing. So he got acquainted with a man by the name of Bowles, who had been a salesman for Dixon Graphite Company, and they put in a graphite mill up at the deposit, or maybe part of the mill was in there already, I don't know. But anyway, he put the flotation process into it and was making very good graphite concentrate.

There again, I remember working for a vacation or summertime or something, drying graphite. This graphite had a little bit of pyrite with it, so when you dry it over the

dryer hot plate, you got a lot of sulfur fumes off of it—sulfur oxide fumes. And it'd be very strong in your nostrils. And I'd stand over the dryer drying graphite. It went through a Huntington mill, and got bagged or put in drums most of it, and shipped to a warehouse in Los Angeles. They had a warehouse facility, and this fella Bowles was trying to sell.

Well, graphite was turned out a lot faster than he could sell it. And the competition was with a brand name—Dixon Graphite company—and it was pretty tough to break into the market, even though you might know that you got a better product. And so there was flake graphite, and foundry facing, and different grades of graphite were made by screening it to different sizes and keeping it clean. And among other things, we made at that plant, a graphite grease, and called it Gemmill's Gritless Graphite Gear Grease [laughs]. I think the only product that sold pretty good was Gemmill's Gritless Graphite Gear Grease, but that didn't sell very much graphite. We did get into the foundry facing a little, but finally piled up the warehouse full of graphite and had to quit. And it was years before that was really all sold off. This fella Bowles didn't have very much luck trying to break into the graphite business. So that was, I think, where my father dropped some more money before it was over.

And following that, he had another venture, I think, into a little subdivision in a canyon not too far from Altadena; I remember he went out dividing up an area into some lots. Now it may be that the gold mountain or that thing up at Baldwin Lake came after—I guess it did come after the graphite business, because I think it came in conjunction with his acquaintance with Mr. Howard Squires. So, I think through my father's acquaintance with Mr. Thompson,, Squires and my father came out to the Virginia Louise mine in



Lincoln County. And the folks landed in the Cal Neva house. The company was called Cal Neva, and the mine was the Virginia Louise mine; and the best house on the Cal Neva property is a house that my wife and I later on remodeled and have as sort of our second home down there (that we don't own, but is still owned by the Cal Neva Mining Company. We have some stock in the Cal Neva Mining Company). But we spent quite a bit of money on this old place, and we've got all our old furniture down there now.

Well anyway, my folks moved into that house for a year when it was just lined with tongue and groove on studs, and was not insulated, and had nothing but wood stoves and so forth in it. And there was no power in those days (early 1920s). You had kerosene lamps, or also they had these gasoline lanterns and lamps that had the mantles, they called them. You'd put a mantle on and then light it, and the mantle would burn down to an ash and made a very nice, bright light. As far as refrigeration went, at that time you had a burlap covered box—open box, burlap covered—and set a pan of water on top and let the burlap dip into the water, and through osmosis, the water would keep the burlap damp, and with the dry atmosphere (which is practically all the time in the state of Nevada) you had a pretty good cooler. And you'd have a door on the front of it, and it'd be covered with screen plus the burlap, see. And you could keep butter pretty good and keep milk pretty good. So that worked out all right. I guess that most people today wouldn't even know about that, you know. Folks then moved into one of the Prince houses, a ridge west from the Cal Neva house.

So life out there at that time was quite a bit of fun, but by the time the folks moved out there, you see, I was starting into high school. And I didn't want to quit school. My

older brother didn't go past high school. He went out and went to work with them. And so he was out there all the time. But I stayed down in Altadena. I had a scoutmaster by the name of Jim Miller that was—he and his parents were—building a house high in the upper part of Altadena. And he had a cabin out in back of the house (they were out of the cabin and into the house), and so they let me use the cabin in back. So I did this and got by on very small change.

I worked at a rose nursery in Altadena where a lady was running it; a very good worker. And it wasn't too far away from this place up in Altadena. So I'd leave school and go to work in the evenings or on weekends at the rose nursery. Learned a little bit about budding, you know, the exotic types of roses on to the Ragged Robin wild rose. I don't know whether I'd be good at trying to do it now, but I learned how it was done then. And you'd raise the bush from a slip of the wild rose in a can. If you wanted a tree rose, you'd let it grow up three or four feet high in a five gallon can, trim all the branches except a few little branches at the top. You'd bud on the exotic rose that you want—it took and started to grow so it could feed the roots, then you cut off the rest, and you've got a strong root system for a rose bush that would otherwise maybe have trouble living, if you didn't take careful care of them.

Well, I went on into high school. I didn't make too good a grades in grammar school, I think I was just sort of an average student. But when I took a course in mechanical drawing at high school, it enthused me. And I also got rather enthused—now talking about all of high school—I got enthused about physics and chemistry, things of that nature. And I had already sort of come to the conclusion I was gonna be a mining man. So these things that interested me, I had no trouble making

good grades in. But, like I told you earlier, the business of having to get through two years of Spanish as a required subject was really a tough thing to do. I had a little fun with my music. I had an English music teacher that used to kid me about being a Scotchman, and we had a lot of fun together. And I played a little bit in the junior college orchestra.

So coming back to my father then, he and Howard Squires were operating the Virginia Louise mine and shipping ore to the smelters in Salt Lake. And this was along toward the end of any shipments. The old (Prince Company) company had built a railroad from the Pioche depot around to the mine. It was a ten-mile railroad and was served by the Union Pacific Railroad Company—branch line to Pioche. Then the Prince Company [the old company] had two old locomotives that had been Southern Pacific passenger locomotives, that were used for hauling the ore. Between the Virginia Louise Company and the Prince Company, [they] had shipped some million tons or so of ore to the Salt Lake smelters as flux ore. Well, toward the end of this was when my father and Howard Squires arrived there, operating the Virginia Louise mine. And the old Prince Company was in trouble. They had paid about \$550,000 in dividends, but then they were spending what they had left sinking a shaft, thinking they were gonna find quite a body of high grade silver ore. And they contracted the shaft on a cost-plus basis, and it broke them. At that stage, I think it was through Howard Squires, that an acquaintance was brought into the picture, by the name of R. P. Sherman. Mr. Sherman had made, the story goes that I recall, some eight million dollars or so in the gravel business in southern California, in the Los Angeles area. And from that, he had expanded into various other things and diversified. Among other things, he had a lot of property up at Lake Tahoe, and he had the—. It

was known as the Cal Neva Enterprise, anyway. And he had companies down in Mexico, two different companies: one of 'em automobiles, one of 'em in the cosmetic business; and one, a National Cash Register sales company.

At that time, I guess Sherman was doing pretty well, and he came into the picture to reorganize the Prince Company and go after this ore that had been encountered with a couple of drill holes. Well, my father did the—sort of the financial raising of the money through Sherman and his associates and kept the money coming in while Howard Squires was running the mine. And of course, my father was there a good part of the time, if not most of the time. They moved an electric generating plant in from Hiawatha, Utah, burning coal. It was a turbine plant—rather inefficient apparently, because they sure used an awful lot of coal. And they put electric pumps in the shaft and succeeded in unwatering the Prince shaft with these electric pumps and driving out to where the diamond drill hole had encountered the silver. When they got there, the silver didn't amount to very much. It was a carload or two, and that was it. Just sort of a freak encounter with the drill hole. (And I might say at this point, that I've had freak encounters with drill holes since then. [Laughs] I've seen this happen several times in my experience. And there isn't anything that can substitute for actually going out and having a look, and sometimes you're better off to develop a property initially with actual development rather than trusting it to drill holes, if it's a small property.) Anyway, they were disappointed. At one stage when they first hit it, my father happened to be away and Howard Squires wired him, "All we need now is mine cars; and we gotta buy at least ten mine cars." So they ordered the ten mine cars and got 'em shipped, and before they got there, they found out they didn't have all this ore [laughs].

So they proceeded anyway and developed the mine to a limited extent, proving up sulfide, zinc, lead, silver—ore that years later was mined under more or less my supervision—well, it was much later. So this thing then, was put on ice and put to rest until something could be done about the zinc ore that was opened up, see. Zinc with a little silver and lead. Now mind ya, this ore down on the lower level was sulfide ore—ore that had not been oxidized— whereas all the million tons or so that had been shipped out of the upper levels of the mine and the Louise mine was oxidized ore that was good for a lead smelter in its fluxing of other ores. And the reason that sale of flux ore came to an end, there was no further market for it in a large tonnage. The sulfide ores in Salt Lake area—other mines up there— had gotten into the sulfide zones rather than their oxide zones, and the smelters still needed flux ore, but the (Salt Lake Valley area) production of pyrite (iron sulfide) was then roasted and became a flux that competed with the imported Prince and Virginia Louise fluxing ore and was cheaper. So that, although the Prince and Louise mines weren't depleted of their reserves, they were closed down shortly after the experience down on the lower level in the Prince mine. They closed down the lower level, and Bill Franklin was hired as the mine superintendent. He had worked with my father and Squires on a couple other small ventures in the county. And he went on shipping some ore from there until probably '27 or '28. But there just wasn't enough demand for it at that time to do very well, and so that also came to a halt. There's a little story I'd like to tell on Bill Franklin. I don't know whether Bill would like it or not [laughs]. By the time this was going on, the folks had moved over into the best of the Prince houses, instead of the old Cal Neva house, and my sister was out there keeping the books—my older sister Delia. And my

mother was living there in what we called the “white fence” house. And the yard, we made no attempt because of the water and everything to have a lawn or anything like that, but it must have been at the time when there'd been some good rains or somethin', but weeds came up all over the yard, in back of this nice picket fence around the house. And they grew up almost as high as the fence, some of 'em. And every evening why we'd gather in the screened-in porch out in front, and my father, when he was around, would have Howard Squires over and maybe Bill Franklin would come over, and Mother would make some lemonade, that was cooled in the burlap air cooler. And they'd sit around and discuss one thing and another. Sometimes have somebody from town like Charlie Thompson over, Well, this had been a weekend (I think it was over a weekend anyway), and Mother'd said those weeds didn't look very good. So I got some colored paper, cut discs out, and pinned flowers on a lot of these weeds. Everybody laughed about it. Pretty soon Howard Squires came over in the evening to visit, and he looked over the fence, “Oh my gosh,” he says, “what kind of flowers are those?” “They must be wild.” He went through the gate, and when he looked close, why, of course, he got a big chuckle out of it.

Pretty soon Bill Franklin came along, and he went through a similar discourse and says, “Golly, what in the world? What are those? I never saw anything like that before?” So he came around, and when he saw what they were, he just got mad as a wet hornet [laughs]—“anybody that'd fool somebody like that.” [Laughs] Well, Bill was much more serious-minded, see, than Howard. Howard was more the promoter type; and Bill Franklin was the operator guy, you see [laughs].



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## LINCOLN COUNTY POWER DISTRICT

My father and my brother David were down in Old Mexico, in Mexico City where they were taking care of the problems of three companies down there for R. P. Sherman. And while this was going on, that's when I left the Pasadena City College or junior college, and came up to the University of Nevada. And those summers I was spending out at the Ruth mine out of Ely and going to the University of Nevada. So that when I went to the University of Nevada, although our family was having financial, well, tight period prior to that time, why by that time Dad was doing pretty well in Old Mexico, and I didn't have to do any work to support myself in the University. I was well funded—not liberally, but I was taken care of. And following that (I'd say it probably occurred before I got out of the University, well it did), my father and my brother were down at the Virginia mine on the Mother Lode, and started a gold mine down in California and operated it for awhile, but I haven't the dates exactly straight on this. It must have been the last year I was in school. And by the time I graduated, my brother

Dave had completed the undertaking over at the Virginia mine and was out at the Prince camp, and came over to my graduation, which was in 1930.

And my father, by that time, had had a heart attack, I recall that he'd had quite a bit of trouble in the last period of his time in Old Mexico. And when he came back, he went into the hospital, and was put on a diet and given nothing to eat for, I don't know, a month or so. Finally, seemed to be on the road to recovery; and had had this stroke; and one side of his face and one arm was partially paralyzed, but he was coming out of it. And during that time, my brother Dave was very attentive and took care of the affairs of the family very adequately. But, by the time he got considerably improved, the proposal to bring Hoover Dam power to the mines was initiated by my father and Jim Elton, the Anaconda manager from Utah, and Mr. Jack Buehler of the Bristol Silver Mines Company, and Mr. E. H. Snyder of Combined Metals Production Company. Jim Elton was the name of the manager of the smelter for Anaconda. And all

of'em put forth some effort to try and organize the importation of Hoover Dam power to Lincoln County. Plans were laid in 1934-1935. But at any rate, my father was instrumental in getting the Nevada Legislature to pass the Enabling Act for establishing power districts. He came over and worked with the legislature while they were pursuing this undertaking of the Enabling Act. And I think Jack Buehler was also quite active in that process of getting the Enabling Act accepted by the Legislature. Of course, both of them being Nevada residents, it was up to them to try and get the legislature to act on this. And my father recounted meeting certain legislators, names of which I don't recall, but who were very cooperative with him; and they managed to get this Enabling Act passed. I think that it may be that attorney Al Scott was helpful on that thing too at the time. Because you know, he had been in the legislature and had been a prominent Nevada citizen from Pioche. So I'm trying here to think who should get credit for that activity. And I think maybe my wife's father, J. C. Jensen, who was connected in certain respects, with Snyder and the Combined Metals from its very inception, as a matter of fact. I think he could have been rather prominent in the scheme, but he was from Utah, of course. And so I think the Enabling Act was worked on primarily by Jack Buehler of Bristol and my father. Well, they succeeded in getting that, and then by (this must have been in '34 and '35, along in there) and by '35, when I went to work at the Bristol silver mine at Bristol, I know that right then at that time, I was engaged in helping out with some reports that were connected with the Lincoln County Power District Enabling Act—well, with the Power District Enabling Act. And, of course, this was set up so that other power districts could be organized.

After the Enabling Act, the next step was to secure federal money available through loan and grant to design and build the 156 mile, 69KV powerline and distribution system. And my function was to draw up plans for the miners in times of mining depression, and everybody was aware at that time of the fluctuating prices of metal. Lots of people don't understand that to operate a mine is not a matter of high profit, generally speaking because on the average, it's a highly competitive business, and although maybe there are not a lot of reserves identified at any one time, there's an awful lot of say, zinc or lead or whatever you're after, in the ground somewhere, that you don't know about. And when you have a good price, everybody goes lookin' for it, and pretty soon some people come up with findings, and pretty soon there's a little bit too much produced, and then the price goes to the dogs. I should say, goes to hell. And you feel the results right quick. So it was recognized, and it has been right along, that this is an up-and-down game. And probably there's no metal that it's more true of than mercury, which has competition from tremendous deposits of mercury in Spain and in Italy, where they sometimes hold the price up, and that allows American producers to get going. And then when they're gettin' too much of the market, why, the foreign producer just floods the market again and closes U.S. mines. So we've seen that a lot. Well, it's not exactly the same thing with zinc (lead-zinc is really the mining experience that I've been in most of my workin' career), but I've seen several times, in that period of time, when you had fluctuations that would either look pretty good to you or would close you down, see.

So it was well recognized that was the case. And under President Roosevelt, I recall that his political discourse ran to the, very much to the social forces, you know, and what could be done for the "common man" and so on, you

know. And so it was part of that philosophy that was being used when I drew up plans for little farm areas in Panaca Valley, all up and down the valley; showing that a miner could have his little plot of ground and raise food, and have his job in the good times; and when he was laid off during a period of depression, he could go back and he wouldn't have to starve. See [laughs]. Well, it was a nice sounding thing, and I think it had a good deal to do with getting the thing through, and getting approval of a loan and grant from the federal government. Nevertheless, that cheap power has resulted in being a boon to Lincoln County farmers and ranchers.

Now I already mentioned the loan and grant from the federal government, which of course, up to that time, I was just talking about the Enabling Act. Well, after the Enabling Act, of course came the problem of finance, and I think at this point it's well to mention that the suppliers of copper (I believe it was probably Anaconda and Phelps-Dodge. I mean, those two seem to be in the back of my mind. I'm not sure that that's right, but I think it is), supplied copper, taking revenue bonds in lieu of cash and at a very reasonable price at the time, because the times were kinda tough then, and the copper wasn't a very high price.

But this powerline, 156 miles of 69,000-volt transmission line was a novel undertaking in some respects; and somewhere in the record the engineers that provided the workability of the line for certain loads and everything, should be highly complimented, because it was very successful; and it was General Electric Company (one of the equipment suppliers) and their engineer who was very much relied on, and this supplier help is so typical of problem solving in the mining business, no doubt in all manner of building.

And the reason I mention it is that our American system of supplying the mining

industry with all kinds of equipment—in this case it was a powerline, you know—and the primary reason for the powerline was based on mines, not on other uses of power (which at that time didn't figure would be very great). It had to be based on the mines, and it was on a very small fraction of the ultimate load that came over that line that the economics were figured. And it was presumed that the power rate might be, would be over two cents a kilowatt hour, and it was not very long after the line was built rates were less than half that two cents per KWH. The availability of power on a sliding scale downward—the more you used, the less it was gonna cost—because this was a non-profit thing owned by the county; and so if you had a heavy use for power, like pumping water to develop a mine, if you used a lot of power, it lowered cost per unit, you know; the more you used, as the use went up, why, your fundamental rate being based on falling water charges at the dam on the other end and fixed charges were spread over expanded consumption. And we found that the powerline was very efficient in transmitting the power with very little line loss compared with, I think it was quite a bit less than was figured. And then in later years, many years later, I became one of the directors of the power district and eventually the chairman of the board of the Lincoln County Power District. And so I've been through that experience. At this point, I'll just go on telling a little about that.

Through evolution of engineering and the ability to put in control equipment that would keep the voltage regulated, this transmission line was found to be capable of transmitting, I suppose, three times as much as was originally thought. And it could transmit a lot more, I think, than has ever been transmitted over it, in the way of load, without having excessive heating of the line. You might run into, of

course, heavier line losses, but if your power cost on the input end is not excessive, then your line loss doesn't have to be excessive. So that there is a lot of flexibility in that transmission system. And the thing has been highly successful. The bonds were paid off in record time. I can't tell you how many years, but they were paid off, and the power rate came way down to less than a half a cent a kilowatt-hour, as for any sizable consumer.

The other thing that I think must be mentioned here is that the whole thing was set up so that any primary consumer, whether it's a ranch out here in the hills or anywhere, was allowed to buy the power at the primary rate. It didn't go through a utility or anything of the kind, except when it got into, say, the town of Pioche, where there had to be a utility to set up the distribution system or keep the distribution system operating, or to Caliente and so forth. But in between, if two or three ranchers or farmers wanted to get together and establish an extension of a tertiary line from the secondary line, to two or three ranches, why, they could arrange between themselves and pay that same primary rate. And it's been very beneficial to the ranchers and farmers of Lincoln County.

And in recent years, shortly before I left there and came to this job (and at that time I was chairman of the board), we arranged for financing of the line up Lake Valley. The original system did have branch lines that went various places in the county, like to Caliente and to Gold Springs out to the east (which is the mining community that didn't develop in that time, because it was a gold area). That line stayed idle for some time and finally was torn out and replaced and put elsewhere to supply ranches. But, a branch line went out to the Bristol mine. So, as I say, shortly before coming up here, there was a proposal to go up toward Geyser ranch to Desert Entry men

in Lake Valley, up around Pony Springs area, which was not as far as Geyser ranch, but eventually the line did extend to Geyser ranch. And a government loan was secured through the REA, and financed by a surcharge on the power going up that valley, and they still got cheap power for pumping water and so on.

And so, over the years, the uses other than mining, even during times when all the mines have been down—here recently there came legal problems with some of the companies, and all the smelters closed down, partly due to "ecology" and everything, and outlets for lead-zinc concentrates were not found readily; and so there has been quite a period of the mines being totally down in Lincoln County—and yet the power district survived very nicely on the other users, the towns, the ranchers, and farmers and so forth. It shows in setting up anything of that nature, the wisdom of not trying to hog everything, but make sure that you've set it up so everybody has the benefit. And this thing has been a highly successful venture, and in talking to somebody like myself, who believes wholeheartedly in private enterprise and the fundamental principle of private financing, not through government. I have to say that this thing would never have been done, at that time, during the '30s, on any basis other than that government help. And I just have to recognize that. And it's been a highly successful thing for the county, and I think for the benefit of the general public. Now that's a funny thing for me to be saying, in a way. But being intimately connected with it for as long as I was, why, I can recognize that it's sure been a great thing for Lincoln County, and it still is.

Now the next thing. There has been, after this extension up Lake Valley, there was an extension over to the Atlanta mine, and an attempt was made to run the Atlanta mine by Eugene Jordan and Associates at thirty-five

dollars an ounce for gold. And this did not succeed due to the very hard ore that this mine has in it, and some of the other difficulties. But, the line was put in at that—number of years ago. This was probably '65 or '66. I don't know. It was after I was up here in Reno that they were attempting to run the Atlanta mine. And they bought a mill secondhand that Mr. [Roy A.] Hardy had over at Golconda and moved it down there. Certain things like the crushing plant and so forth were inadequate. But now with the price of gold high, higher—I don't like to call it high, because the price of gold is only now what I'd call on a parity basis with the thirty-five dollar price at the time that it was first established by Mr. Roosevelt. In other words, inflation has gone on to an extent where this price of above a hundred and fifty dollars is about parity with thirty-five dollars. In other words, it (gold) was a constant price during all of that time that prevented a lot of our gold mines from being active. And the same thing can be said for silver. We'll talk about that a little more some other time.

But anyway, the line is in. Standard Slag has gotten the deal on the mine. And they're now down there activating the mine. Part of the reason for doing it, and an important part of the reason John Harmon says, who is the manager for Standard Slag, is that the water is already developed, the powerline is already out there, and he would regard having to build a powerline, even, as a major undertaking today, starting with about two years of ecology study before you could build it, which is, of course, asinine and ridiculous, all due to environmental impact red tape.

And one of the things I complain about today is one of new regulations of the Department of Interior, requiring that before you can build a powerline or before the Interior Department can approve a powerline (its importance doesn't matter, if it involves a new

right-of-way), you can't start doing anything about it until you've had a study and gotten an approval from various federal agencies. Even if you're a subdivision of government, even if you're the county, you can't do it. And under past practices (and I'm not sure that the law has changed that much) but under past practices, any county has had the right of eminent domain or has had the right of access on public domain. And I personally laid out rights-of-way, did this for the line up Lake Valley, shortly before the line was built; laid it out, had another fella spot where the poles would go, but I laid out the course of it, and drew up a map, and sent it in to the Bureau of Land Management. But we didn't wait to get an answer—I don't know whether they've got an answer yet! But we didn't wait to get an answer. We went ahead and built it! That's the way it oughta be done, because there isn't anybody in those faraway departments that know as much as the local people who are doing the job! So here was a subdivision of the county building a powerline, and it just is absolutely ridiculous that that kind of freedom to go ahead and do the right thing isn't still available to a local subdivision of government. And I can't understand why this kind of ridiculous roadblocks are put into our work to just gum it up! Now. Did I sound mad? [Laughs]

Okay. I've gotten way off the beaten track here I guess, in talking about the, you know, the period up to—. But I thought this power district thing was very important, because it has been a boon to a lot of people and not just the mining people.





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## IMPRESSIONS OF PROFESSORS AND ACQUAINTANCES AT THE UNIVERSITY OF NEVADA

Well, we're on a chapter here concerning the period of time and experience of my coming to the University of Nevada, and the acquaintances that I made at that time, and a little bit of looking back into the graduates that are now operators in Nevada, and other graduates that have important positions outside of Nevada. But, first of all, a few comments about some of the old timers that really were much before my time, that I picked out to say a few words about, because I either know about what they were doing or knew them personally. And in that category, I'm sure that someone else like one of the deans of the school up there, or others that were of those earlier times, could have pointed out a lot of famous mining people that made big reputations—that came from Nevada, in mining.

But, to start in with some that I do know of the older group; one of 'em I got very well acquainted with, that I had known slightly before I left the University in 1930, but I got well acquainted with when I came back here in 1964, is Fred de Longchamps. And

Fred had operated his own Talapoosa mine successfully, but also he'd gone into studying architecture and became a well-known, wide-ranging architect. And a very personable person, and I knew him quite well before he died a few years ago.

Then others that were early graduates, for instance, would be Roy Hardy, who only died recently in his late eighties. Roy was here, had formerly been in the same office with my predecessor, and I got to know him very well and worked closely with him on several things. He had been a Virginia City operator of mines up there, and had associated with a close friend of his, Alex Wise, who was truly a Virginia City operator in mining and milling. And, of course, one of the professors, Walter Palmer, a 1905 graduate. (I didn't mention that Roy Hardy graduated in 1910.) Walter Palmer graduated in 1905. And he'd been out in industry and was back here as a professor of metallurgy. And I took courses under him. Ott F. Heizer was a well-known Nevada operator. I don't know what year he died, but he became well known and

famous over the state of Nevada. Woodruff E. Romig, I think he was called “Tex” Romig (if I’m not mistaken), became famous as a developer of new mining methods at Climax, and was a very personable and positive mine operator that made things go his own way and successfully. He’s a graduate of 1922 of the Mackay School of Mines. Alfred Merritt Smith, whom I was acquainted with for years before coming over here, was a wide-ranging state personality and had done a number of mining jobs; and had worked in South America—known “Long Tom” Smith because of his experience in placer mining—was a very well-known person, and was state engineer in later years. And let’s see. I guess that about covers the early ones. Oh well, of course, since I did mention Palmer, I should also mention that Jay Carpenter, also a 1907 graduate, I found as a professor here. And Vincent Gianella was a professor here. Vincent Gianella’s field experience, I suppose mostly was just while he was teaching, but he did have a lot of experience around the state as a geologist. Jay Carpenter had been an operator in the Tonopah area and elsewhere (I think, in California) before, in his earlier period, and came here as the director of the Mackay School of Mines. And another one was William Smythe, who also was a professor of mine. And he had been out in industry before coming here to teach. I don’t know just when, but he was a graduate in 1914. Carpenter was a graduate in 1907, and Gianella in 1920. I’m skippin’ around here, maybe got some of these things a little out of order, but—.

I guess the next thing to mention is to go then to the current mine operators—people with responsible positions— that are former graduates of the Mackay School of Mines and now operating mines in Nevada. Now, I’d like to point out here, for a person to be a mine

operator or in a very responsible position with the company, sort of making it go from a dollars and cents angle, turns out usually to be the student who had the objective of being a graduate in mining engineering. And yet, that doesn’t mean that others who maybe don’t become well known or famous, may be the kind of people that are digging deep into technical aspects; whereas the man who comes to the top and runs the operation, usually is not the man who digs deep in all areas. The operator gets more or less of a broad-ranging viewpoint, and winds up havin’ to be more of a human engineer than anything else. But he has to understand all these facets of the problems. So I’m not pointing—highlighting these particular people that are now operators, or became famous as operators, as necessarily being more intelligent or anything like that, but they just happened to be that kind of people and are well known. And it’s part of what makes the reputation of the school, however. And the school does have a very fine reputation going way back. And even in spite of the fact that the school has gone through a slack period since I graduated there when—. In fact, when I graduated there, engineers who were turned out around that time, and for a few years thereafter, were plentiful in the mining industry, and they were forced almost to start in at the bottom, and try to work up. Whereas now, people are so hungry for a mining engineer graduate, that they get a pretty good job startin’ right out. And it so happened that we had several of these young engineers that graduated from this school, who went through our so called “beginners mill” down at Pioche, starting in as just stope engineers, and surveyors, and so forth. It didn’t hurt ‘em. That experience wasn’t at all missed on ‘em.

Well, coming then to the people that are now operating in the state of Nevada that



were graduates about that time or later, I come down here first to Tom Cahill, 1935 (but I don't know whether he finished his schooling here, or went elsewhere, or what, because he's listed as expected to graduate in '35). Nevertheless, I assume that he got his training here basically. And he's the manager at Basic, Inc. at Gabbs at the present time; and he's been with them for a number of years and worked up into that position.

And then I come down to D. Lemaire, a 1938 graduate. Was the manager of Jackson Mountain Iron mine for years, and now with Cordex Exploration.

Then there's Jack Frank, who's the manager out at Kennametal; has a very responsible job there in tungsten and manufacturing of tungsten products.

Come down then to Bob Fulton, who is known all over the United States, but also I put him in here—he's not really operating a mine in Nevada, but he was a director of Newmont; and left Newmont recently and is now the president of McIntyre Porcupine in Canada. But, I put him in here because he was very much responsible, had sort of the overall responsibility, for the exploration in northern Nevada that came up with the Carlin mine that Newmont has. And he and Byron Hardy were the ones that carried out the exploration work; although I understand it was John Livermore—and I don't know where John Livermore graduated from—but anyway, he was the one, I think, that broke the rock off of the right outcrop that led to this so [laughs] Carlin mine—I'm trying to sorta give the right credit where it belongs. But Bob Fulton, of course, was the chief geologist for Newmont that was responsible for that. And wound up as a director of Newmont, before finally going with the Canadian outfit. And I knew Bob Fulton. I, of course, knew his father very well, who

was the director of the Mackay School of Mines when I came here and for a few years thereafter.

Then I come down to Fred Gibson with Pacific Engineering Products Company in Henderson; his father and the family were responsible, I think, for establishing this enterprise down there. Brother Jim is a good personal friend of mine through contacts in the legislature, and a few other contacts since I came up here; although I knew his father pretty well when I was down at Pioche—his father being down in Las Vegas.

Byron Hardy, I mentioned already, was connected with the Newmont development. I put him in here with the current Nevada operators simply because of the Carlin mine; although he's now, I think, manager of exploration for Newmont in the Tucson office. He moved away from Elko, Nevada several years ago.

And Royce Hardy [Sr.] was a graduate in 1910. Well, I guess I didn't mention up here that Jack Frank was a graduate in '51. Gibson in '51. Byron Hardy in '41. And Royce Hardy in 1947. And I also put him in here, in the Nevada operating category, for a particular reason: that he grew up with his father in connection with the Getchell mine, and came back after he went with Duval, and well, he'd been with the Department of Interior as assistant director, as I understand it; and was with Duval when they investigated the Battle Mountain enterprise that's going right now. And he was responsible for approving this as an enterprise for Duval and made extensive studies of that, and is a widely recognized person in the mining industry.

John R. Harmon is next; a graduate in 1951, who is the western manager for Standard Slag. These are just some that caught my eye as I thumbed through the list of graduates.

So, now a few that I haven't mentioned that are operating outside of Nevada, that I happened to notice and know something about. Let's see. There'd be Harve Ashby, who's now retired, was a graduate in '31, and one that I got to know very well when I was going to school, was, when I went down and visited with him in San Manuel, the resident engineer for that very large copper operation with their deep shafts. And it was quite a responsibility for a person taking charge of that mine layout and development.

Then there's John D. Burgess, who I got to know while he was a student. He came over to Pioche on one of these tours that the students go on. He is the director and manager for Cyprus mines in Cyprus.

And I see that Robert E. Kendall, who I don't place—I might've met him somewhere along the line. But he's vice president of U.S. Borax Company, which is a very large company, and deserves mention of course—along with a lot of others that I probably haven't had my attention drawn to.

Then there's William C. Kinnon, a 1930, I expect, 1930 graduate—he may have finished somewhere else, I don't know. Anyway, he was, I think, in charge of the engineering for Red Mountain Company down in California, for Mines Exploration. And now he has his Kinnon Associates consultant business in Wickenburg, Arizona.

Victor Kral, who I got to know quite well, because he was here at the University for a number of years after leaving school. And when I'd come over here, I got acquainted with him, and corresponded with him. A graduate in '38, and got his master's degree in '51. He's manager of Knox Mining Corporation, a subsidiary of Hannah Mining Corporation, Rockland, Maine—a real responsible position.

And Kenyon Richard, who I got to know very well, because we did some geological

work together down at Pioche, while he was a geologist for American Smelting and Refining Company; and I think before he retired, he got up to be the chief geologist for AS and R over in Arizona. And was widely known through his very good work. Well, those are the ones that came to my attention as I went through here.

Now the ones that I directly associated with while I was going to school, I'd like to mention them. There's Robert Adamson, who's been with the Ingersoll-Rand Company in New York for years, a graduate of the same class as I, 1930. Norman Annett graduated in 1932, but was there when I was going. As you recall, I was only at Nevada for two years—my last two—having come from Pasadena City College, at that time called Junior College. Annett is living in Wellington [Nevada] and is a consultant engineer.

And I mentioned Harve Ashby before. He was one I got acquainted with first hand. He was a graduate in 1931.

August Dixon, graduated in '28, but he was around there enough—I got acquainted with him at that time, and of course, known him since. And he became the mine superintendent for Basic, and was retired a couple or two or three years ago. I've forgotten just when.

"Stub" Dubravac, Stephen R. Dubravac, was an acquaintance of mine from when I was working in the Ruth mine during summer vacations and going to school. And we came over, and my first year up here at the University, he was a roommate of mine. And then he went to Alaska and attended school up there for another year, and he graduated in 1931. He became, I think, the supervisor for basic management at Henderson for a number of years.

Norman Ericson was there, and I got acquainted with him going to school. Knew him quite well. Graduated in 1930.

There was Minten E. Harris, graduate in 1932. I saw him a few years back, I think, before coming up here, or maybe it was since coming up here, and discovered that he was a U.S. Forest supervisor down in California. Some of these fellas wind up in different occupations [laughs] than they start out. But, apparently he was healthy and doing quite well.

And then there was Orville Moyes, a 1930 graduate. I ran into him while I was in Salt Lake, residing in Salt Lake for a few years. And he was a consultant mining engineer for the Jen Corporation in the uranium field, and our people were associated with this in a mine contracting capacity.

Then there was Santos Murillo, Murillo (I don't know whether you pronounce it "Murillo" or "Mer-eeyo;" I guess Spanish is "Mer-eeyo"), who was a 1928 graduate, and I think finishing up a little bit of work after I went there in '29. He went back to the Philippines, and somewhere I heard that he became one of the top people in their, well their bureau of mines, whatever they call it over there.

And Victor Pimentel was a '28 graduate. I got acquainted with him. He's down in Brazil, I believe now, and associated with some mining company there.

There was Robert Prince, a 1931 graduate, who got well involved in mining, and I think was killed in a mine accident. There was Fred Roumage, a 1931 graduate, and got his EM degree in '41. He's listed here in Reno. He hasn't come around to see me, and maybe he's off somewhere else [laughs].

There's Weaver A. Solomon, who was a good student I recall. He is graduate in '29, and he's listed as being retired and down in Monterey Park, but he was in the Philippines, and was one, I think, you know, on the [Bataan] big march during the war

years—I guess went through quite a bad experience there.

There was Harold Vaughn, 1930 graduate. I believe he's involved in water engineering down in California in the agricultural area.

There was Wally White, who was a 1930 graduate and had spent years with the Nevada Department of Health, or whatever you call it. And he's still with 'em, I guess. Is he retired? [He works for Incline Village.] I think I have heard that he was with the Incline Village outfit.

Now a few more comments. There's some of these fellas that wound up at Pioche in our operations there. And I got further acquainted with 'em over there—either young engineers or more or less contemporaries. One of 'em was—. We'll start again alphabetically. We start with Sam Arentz, Jr., graduated in 1934. We worked very closely together for a few years there when I was geologist in charge of engineering, and I was doing this for the Bristol Company and the Prince Company and Combined Metals, and he was the resident superintendent for Combined Metals. This was during the period, I guess, from '45 to about 1949 or '52, somethin' like that I guess.

And John T. Atkins, who came over there as a young engineer. I don't know what previous experience he had had. And I mentioned him before as manager for Utah Construction in Shirley Basin—a uranium mine, I think. (Maybe I didn't mention him. I should've.) John Atkins came there as a young engineer and worked up to being the head mine engineer for us. A very good young fella, with a nice family.

And Frank Eastman was there when I started doin' some work for Combined Metals in 1945. He was there, I think, as the chief mine engineer, but he left soon after that. He

was a graduate in 1942. He's in Tucson, but I don't have any occupation listed for him.

There was Fred Porteous. Came there as a young engineer in 1948, graduate. Worked with us for several years and got involved in the perlite operation, after doing mine engineering. He's now self-employed, and has a small mining company of his own over at Gabbs.

There was John Russell, a 1942 graduate, who became our mine superintendent over there, Bob [Robert R.] Durk left. (Bob Durk came from Idaho.) But he's with Utah International over in Wyoming, running a uranium mine, I understand. John was a very fine young fella. Been a Marine in the war years, and has an aggressive attitude and yet he's a very quiet person. He's kind of an unusual person, and I have a great regard for him.

And associated down there I might mention, too, Byron Hardy was—see I still had a little connection with the Bristol Company and Byron and I worked together in the development of some exploration project adjacent to Bristol. And he later on, after going to Arizona and New Mexico and winding up at the Groundhog mine, where I visited him, he later came back as manager of Bristol for a few years until he went with Newmont up at the Carlin mine. So I had gotten pretty well acquainted with Byron.

Well this kind of reviews the student side of the thing; and I did mention professors, but I'll go back now, and mention, of course, that at that time in '29, Walter E. Clark was the president of the University. Mr. [Fred E.] Bixby was the dean (I guess they call 'em) of College of Engineering. And the others in the college of Engineering separate from the Mackay School of Mines that I got well acquainted with, beside Mr. Bixby. I think I had a course under Mr. Bixby. Then there was [Horace]

Boardman. And I know that I had some special surveying course under Boardman. And there was [J. Claude] "Geology" Jones [laughs]. Of course, I had a course under him. But he was listed under the College of Engineering. And Stanley Palmer. Of course, I had my electrical course under Stanley, and he tried to get me to shift from mining over to electrical. The reason is kind of amusing. The reason for this is because of a special professor I had in junior college that taught electricity from the fundamentals. That is, instead of just, you know, learning the formula for electrical equations for solving electrical problems, he believed that any student had to learn how these units were ever developed in the first place, and the history of these units of electricity—like the coulomb (quantity) and the rate of flow being an ampere, which is one coulomb per second, and the volt—you know, how these were derived in the first place. Well, I was so familiar with this at the time—my professor down there had taught me, and in fact I wound up correcting physics papers for him because I got so wrapped up in this; so interested, you know—that when I went into a course in electricity, and I was called to the blackboard to solve a problem, for which I was supposed to have these formulas in my head and go ahead and solve the problem, I didn't remember the formulas, but I knew how to derive it. So I derived the formula over on the side, and solved the problem. And then the Professor Palmer asked me what I was doing. Of course, he knew, you know, but he wanted me to tell the class what I was doing. And so I did. I explained this to the class. And then he got ahold of me afterwards and he said, "I'd like you to transfer into my electrical course." Well that, of course, I felt real good about, but I was all set to be a miner. So I always liked Palmer very much because we got a good start.

On the other hand, I got a very poor start with Jay Carpenter. Oh, I got a horrible start with Jay Carpenter, because Jay had a (I guess it turned out to be good) a good habit of making his students keep copious notes on his lectures. And you had to, at the end of each semester, you had to turn in a notebook that showed that you were keeping copious notes on what he told you in class. Well, I'd never been trained to do that, and I didn't really believe in it, at the time. I believed in it later [laughs]. So when I came up to the end of the first semester under Jay Carpenter, I got a condition in the course, because I hadn't kept a good notebook, see. Look at my desk [gesture over piles of papers]! I guess maybe you can understand [laughs]. So anyway, I got a condition, and he gave me a book to read and outline. Well, when I went home Christmas vacation, I guess it was, we had had to turn our notebooks in prior to that for him to inspect, why he gave me this book to outline, and I had to spend part of my Christmas vacation going through this book and outlining it. But he was kind of kind to me. The book was well-titled in all the chapters, so it was easy to copy the titles down and make an outline. I think he knew what he was doing. He was, I think, making an object lesson out of this or something. And I learned somethin' from it, because that taught me to do what I was told to do as a student, you know, if I wanted to get a good grade. And so the next semester I kept a good notebook for Jay Carpenter. Then I got a good grade [laughs].

Well, then of course, in the Mackay School of Mines was Carpenter, Couch, Walter Palmer, and Bill Smythe. And I had courses under all of 'em. And the dean of men was Mr. Raymond Leach that year. And I think Haseman was the dean of men for the next year, in 1929, '30. And I had a course under Haseman too. He taught the

advanced mathematics. After you've had your calculus, and differential equations, and all this stuff, why then you're supposed to take a course in what they call mechanics—a math course in mechanics. And he taught that. And when I started that course, I was very, very disappointed to find out that Prof Haseman taught it in the British system of units. And all of my training, coming up to the University from junior college was—. We started right out in physics or chemistry, or any course, we were in CGS units, see. And of course, in order to relate this to the British system of units was a little bit unusual for me. And I thought, well, I'm gonna have a hard time in this course, because I'm gonna be behind others and everything in being able to handle these damn units. [Laughs] It made me kind of mad, you know. But the problems were all given in British units, and of course that wasn't bad. It was just that it didn't—I wasn't familiar with 'em in the mathematical sense.

But, I had a funny experience. I guess I oughta relate this, although I wouldn't want any student to take it as a good example. I was in his course; and had—this came up at one of the final exams. (I don't know whether it was a quarterly exam or the last one. I think it was one of the earlier ones.) It (the experience) wound up giving me a great deal of confidence in it, after that. But I'd been out practically all night on a party with some of the other boys, and I'd consumed a lot of apricot cordial along with [laughs], along with a chicken noodle dinner with lots of chicken grease in it, I guess. And the doggone, the oil apparently didn't allow the apricot cordial to take effect, and I guess I must have had an awful lot of it. In fact, I think the chicken came from thievery, and it was— - Well to explain that a little bit—it was the Sundowners. I had become a member of the Sundowners. And one of the—I'm not certain that this was related to that



experience, but I think it was—one of your requirements was to steal a chicken. Earlier, I, understand, the Sundowners had to ride the rails, you know, underneath the freight cars or something, but that was discarded before I was there. And you had to go out and steal a chicken. I understand that the ranchers and farmers knew about this, and if you ever got caught why you paid a big enough penalty so they weren't out. Well, I was with a couple of them that succeeded when I got initiated. Anyway, leading up then to this particular night, why we had this big chicken noodle party, you know. And came up, oh, I suppose it must have been after three or four in the morning before we were through. I went down to the Wolf Den, which was just below the school there, and had some orange juice for breakfast. I didn't feel like eating. But I felt like havin' something, so I had some orange juice. And apparently, that cut through the grease and caused the alcoholic content to come forward. And my first course, my first class, I should say, was Jay Carpenter's class. But I was all right in his class I guess. I don't think anybody really caught up with the fact that I was inebriated. And I got out of there and had to walk down the length of the quad, and up the second floor, or third, whatever it is, to Haseman's course. And he had a pretty good-sized bunch of students in that course. And I went in to take this examination. And from that minute on, I didn't remember anything. And I came back to life realizing that I was around in the next class, which was Geology Jones class over at the mining building. And I was up at the board trying to explain how to determine the dip and strike from three drill holes intersecting a certain bed or vein, you know. And I was doin' all right in theory, but I couldn't add or subtract straight. And the class was kinda makin' fun

of me, and so was Jones. I mean he was kind of a, you know, a pretty good guy; it didn't bother him any apparently.

So I was beside myself. What the hell had I done in this exam? And I asked some of the others, after I got out, what I did. Did I take the exam or not? And one of 'em said, "Yeah You were one of the first ones to get up and walk out."

And I said, "No! I guess I just didn't do it then."

"You handed in your paper and walked out." Well I thought, "Well I sure flunked that."

You know, when the papers were passed out, I had the highest grade in the class, which was, I think, a ninety-one or somethin' like that. I've forgotten. And the errors were, you know, just technical errors. I still came up with the right answers on these problems. And this is not given here as an illustration of what anybody should try and do, cause it'll never work out that way again in the world! But I must have had that thing, that exam, so anchored in my mind, I must have turned everything else off, even my awareness while I was doin' it. It's a funny experience. I had to relate it 'cause I've related this so many times since that it's a—it was quite an experience. I'm sure I did much better than I would have done if I'd have just been in my normal senses because, you know, I'd have been worried, or worried myself, or something [laughs]. Well, that's one of the experiences in there that I had to relate.

One of the fellows that I associated a lot with while I was there was Hardy O'Dell. Hardy and I had a thing going that meant a lot to both of us, I guess. We both had old Dodge automobiles. [Laughs] And I remember we took a couple of trips out to Pyramid Lake and hobnobbed around together. I've never run into Hardy O'Dell since. But he's working

for Kennecott up at Garfield, I believe. And I've known of him being up there, but I have never run into him since.

And another that I associated quite a bit with that was a roommate of mine—I'll have to think of his name—was Bill Copren. I think he was just taking arts and science course or something, but Bill and I hit it off pretty good and roomed together. I think the first year I was rooming—or first semester, I guess it was—I was rooming with Stub Dubravac. And then I wound up rooming with Bill Copren at Lincoln Hall. By the way, I never did even try to get into a fraternity, because I came up there just for the last two years, and a very serious-minded character I guess, as far as my studies were concerned. And, well Bill (I'll try and explain him a little bit) was a character of his own. He was taking a special course in the military training—other than just the required course, I think. I think he wound up being in the lumber business up in Sierraville or somewhere up there. And I've seen him a time or two. He dropped down here, and he dropped into see me one time. And he had a definite allowance from home, I guess, to go to school on. And the first thing he'd do, is pay his laundry bill and pay his board bill (where at that time we were eating), and he'd go downtown and gamble with the rest of his money. And usually, of course, he'd lose, and be broke, maybe havin' to borrow a little money for spare change here and there. But, his allowance'd come, and he'd clear up all his debts, and then he'd have somethin' left over. And sometimes, when he was lucky, why, he darn near lost out on his studies, because his money would last too long see [laughs]. But he was a helluva good guy, and very, very personable. Lots of good humor.

And I did look back at the old yearbook for that first year to see who it was at that

time that I got pretty well acquainted with, you know, to remind myself a little bit. And Michael Lawlor in the Sundowners. (I wasn't a Sundowner, the first year, of course.) Orville Moyes was prominent in one of the geology courses. I think he was taking a geology course of some kind, and not so much of an engineering course. Then with Ernest Nichols—pretty much of a playboy fella [laughs]. And I think he graduated that first year. And I think he's one that was on the chicken noodle party [laughs]. And so this, if that's true, then it means that I was going to Haseman's course the first year I was there. I guess that's probably right. Then there was Thomas E. Brown. I think he was rooming in the Lincoln Hall; probably is how I got acquainted with him. You know, we'd play cards up there once in a while, poker and so forth, penny-ante. And Clifford Carlson. And I think in the engineering courses I got acquainted pretty well with Derrill Angst. I don't know what he's doing now. I haven't tried to run that down. But he was over in, I believe, electrical engineering. And another one in electrical engineering was Walter Ballerstein, who I figured was—as I recall, he was a very good student. And I guess Norman Erickson. I don't know whether—I think he must have been staying in Lincoln Hall. Glenn Lawlor, I've forgotten how I got pretty well acquainted with him at that time. And Hardy O'Dell I mentioned, and Harold Vaughn. Well, I didn't try to go through the second year on the acquaintances, but I think they're pretty well covered in what I said before.

So I suppose, speaking of the school time, one comment I'd make about it is that I thought the training we got there was very good, and it was very practical. And I think going back over the years, the reasons this school has stood out as a



mining school was the fundamentals. The emphasis on fundamentals. And I've had in my experience in the field and industry; I've had the experience of training, well not training, but having under my supervision engineers that had a good background in mathematics and chemistry and physics. That really is, that really does it. If you know those fundamentals, and you've had a good drubbing in 'em, you can go right to the top, whether you've graduated or not, in being an operator. The other thing you need though, and it's very important, and it's the thing that maybe I didn't realize as much then as I have after going through the mill of industry—the other thing you need is a good feeling for the other fellow. Mr. Hoover, who I got acquainted with in the Pioche operation because of his visiting there a number of times, calls it “human engineering.” [Laughs] One of the things that he pointed out, and I'll say it right now to kinda illustrate the point, he said the—of course he'd had world-wide experience in Russia, China, Burma, Australia, everywhere you know, and his stories on mining were fantastic. Maybe we'll get on that subject somewhere. But one of the things to illustrate this point that he made a point of, and I've repeated this a number of times about this “human engineering” business and so forth. One of the points that he made was the difference between an American engineer of that time and a British engineer. Now the British engineer of Mr. Hoover's time had been steeped in the humanities, you know, and his engineering was just part of his very, very, detailed training. The, the British engineer did not have the urgency about him that the American engineer had. And the American engineer had the urgency of the whole mining business, being a business that's there to make a profit, and that ore is somethin' that can be mined at a profit. And if it can't be mined at

a profit, it's not ore. You know, that kind of thing. And if you're gonna make money here, you gotta get goin' and do it right now, see. That kind of difference. And so he illustrated it in this way; that when the British engineer was about to set up a mining enterprise, you know; it had already been explored enough to know that you're gonna do it, and you're gonna build a plant, and you're gonna sink a shaft. First you're gonna sink a shaft to mine the ore, and then get prepared for the plant. But the British engineer would take a long, long time—maybe a matter of several years planning all this, and doing it in great detail, and debating how even where they'd sink the shaft. And you'd get the American crew of engineers on the job, and they'd go out there and argue a few minutes—of course he didn't say a few minutes—but he says they'd size it up rather quickly, and somebody'd point on the ground or spit on the ground, and say, “Sink the shaft here [gesture], put the mill over there [gesture] and let's get goin'” see. And so he said that this was a very, a very striking difference that he ran into in his time. And I can see [laughs] the difference pretty well; and I think most people who've had experience around the world would see it. I haven't had experience around the world. My experience has been pretty well concentrated in Nevada, California, Utah, and very little in Arizona—just trips. So, I've been sort of restricted in my area, but of course the mining world is pretty small, and a lot of people cross your trail on their way somewhere else.

**S. FRANK HUNT,  
FREE ENTERPRISE MINING**

About the [S. Frank] Hunt trips and whether he was around at the time I was going to school, that came in later. But it was a very productive thing. In fact it was the

Hunt funding that brought some of these students down to the operation that I was connected with in Pioche at the time. And I think this was when I was at Bristol. It must have been mainly in the period from 1935 to '39, somewhere in there, because I remember they came down and stayed in the Prince bunkhouse, I think, the first year. Well going back to Mr. Hunt. You know, my recollection of the story is rather simple. He promoted and raised money from people who didn't even have too much money, to sink a shaft on an iron gossan that he believed was a copper gossan. And he had, I'm not gonna mention any names here because one of these people was a friend of mine—a good guy [laughs] that came from Anaconda and looked it over, and said, "No. It's no copper gossan," and turned it down as far as Anaconda was concerned. And anyway, Hunt didn't, it didn't destroy his belief. This is a very important thing, because the mining law is based on the free access of the individual to the public domain, and if he's right, he has a right to succeed, and if he's wrong he's just wasted his time or his money or whatever. And I think the Hunt experience is very illustrative of what we need to preserve. He didn't give up. And at that time we didn't have any SEC. We didn't have anybody going out to try and stop him because he was gonna do a useless thing, or gonna destroy the landscape, or anything else. And anybody that put money into his venture, they didn't have to think that the government was gonna protect 'em, or that his venture had to be exposed and reported on in a certain fashion, and everybody warned that it probably won't work and all this. If anybody put their money in there, they knew they were on their own, even if it was the lady running the rooming house or what, and he had that kind of people helpin' him. And he succeeded, see.

Now that isn't the only illustration of that kind of a thing, but it was one of the prominent illustrations. And the history of mining is full of these things. The experts don't find these things. The experts come along after they're found, and evaluate 'em, and probably very knowledgeably evaluate them. And if it's a good one like that one was, why Anaconda was right back in there after Hunt found it. And they took it over, you know, and they arranged for the long truck haul, and this was the origin of Wells Cargo [laughs] you know—well, not the origin of it 'cause Joe Wells had done some trucking for Anaconda up in Utah you know, in connection with the smelter operation earlier, and he was just the logical one to get the contract. But anyway, it made the Wells Cargo thing from there on, because it was [laughs]—after this long truck haul of high grade ore to the railroad from the mine at Mountain City.

Well, I think what I was interested in pointing out here more than anything else, was the fact—because it illustrates something in regard to the mining law—the fact that for every man with his feet on the ground, acting conservatively, and being sure of his ground, and where he's going and how the thing will come out financially, for every person that is trained to have that attitude (and that's the attitude that a mining engineer has to have, or a geologist working for a mining company or anybody)—he's got to be a conservative or else he's gonna be out pretty quick. And that's just the way the thing should be. But for every one like that, there's a dozen or maybe a hundred (I don't know how many) people that are overly optimistic. And usually they're not engineers. They're the layman that doesn't believe that it isn't there. He's gonna prove it's there, see. And they're just gonna go ahead anyway. And there are a lot of those people, if they got a little showing that, you know,

they'll build up an imaginary thing about it, and they're gonna keep on lookin', and workin'.

So, I think it was Jay Carpenter that first pointed it out, that the mining activity over the state, at the time that I was going to school, he thought (if you counted the efforts of the prospector, and the original exploring efforts and everything), it was generally a losing proposition, this exploration business and early development. And the small mine operator segment—all was on the overall, certainly, a losing proposition, even to the extent that the famous Comstock Lode was by and large a losing proposition to the operators. The people that made the big money were the promoters, and the exchange, and people like that you know. And the thing right there I want to point out is that every ounce of silver, every ounce of gold that came from the Comstock and went to the U.S. Treasury as support for our currency and for our economy was just as good as if it'd made a big profit. And these are things that have to be borne in mind all the time. You've got to allow these individuals to go lose their money if they want to. Then when you're raising money from the general public, you've got to let the general public gamble just like you do when you let 'em gamble with a slot machine. And you shouldn't put 'em down for gambling. But you should, in my opinion, you should just loosen up on this SEC regulation because it hasn't done any good.

There've been more people lose money investing money with the so-called protection of SEC, than ever lost money under the other system, because there's been more of an attitude by the investor that, "Well, I know the government's there to protect me." And the government isn't there to protect him. It isn't there protecting him anyway. Because the slick operator can go around any of these

doggone regulations that you want to set up. And he does. People think they're protected, but they're not.

Now I'm talkin' about the mining industry of course. And this is peculiar, maybe, to the mining industry, in a sense. But I've been reading this American Institute of Economic Research or whatever it is, in Barrington, Massachusetts. Is that where it is? Great Barrington. And they have a recent illustration of this SEC problem published by Harwood, that I think is right to the point. And he's not talkin' about just the mining industry. He's talkin' about all manner of investments in business enterprises. And anyone that's interested in that phase should dig up those reports and read 'em, because I can't do what he's done in reporting on them. But, I do believe this, and I recall that early in my operating experience—as an operator—when I was superintendent at the Prince mine, after the Caselton mill was built, I was involved in going around meeting with mining people here and there, in the early war years. And I got well acquainted with a man from Montana by the name of Trauerman, who was running the Montana Mining Association. And he and I were (and that was at the early days of SEC) both mad at SEC, because SEC was tryin' to put the squeeze play on the kind of activities we thought had to be furthered and promoted. Well, in short, since that time SEC has failed to stop anything really. But in other words, our concern that mining wouldn't be allowed to thrive, was ill founded because SEC didn't get that (didn't really stop promotions). They just publish all of these things you gotta do, and all this paperwork you gotta put out, and make it more profitable for the attorneys and the slick promoters. You gotta go through that avenue before you get there, that's all. But, it's still done [laughs].

## WOMEN MINING STUDENTS

[I will discuss women in the School of Mines.] Well, there was one student, Betty something. I can't think what her name was. Bowman, Betty Bowman. That came down on one of these tours. She was a graduate. Let's see. Let's see when she graduated. I'm quite sure she did graduate. And she traveled around with these [laughs], these students and was very—Bowman, Betty C. Bowman, 1937, B.S. in Mining Engineering. This list gives her address as 2580 Raleigh Drive, San Marino, California 91108. Well, she was one of the boys as far as hiking to the top of the hill, and diggin' right into everything that they were lookin' at, and I think she got a good education. I suppose there've been a number of others. Has the number increased in recent years? I haven't noticed.

Well, I've had some experience in other ways with women in this mining industry. Of course, ruling out the secretaries and office people, people of that kind. Why, I know that Anaconda used women extensively in their map work. A field man goes out and maps, and fixes up his notes. Whether they're good, bad or indifferent, they come out lookin' pretty good after the ladies have gotten through [laughs] in the drafting office, you see. So, I know they were used way back for many years in that way. But as far as women getting into the operating end, it's only very recently that I've heard of women actually taking men's jobs like say—and this applies more to open pit mining (I don't know underground mining where it's done)—but in open pit mining, they're actually driving trucks. These big—doesn't matter how big the truck is, it's powered by power steering and everything. They can do just as good a job as a man can, and maybe they're a little

more reliable, as far as, you know, stickin' with the job, and doing it without goofin' off, you know. I think they probably are more reliable. [Laughs]

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Well, now as a further comment about school at the Mackay School of Mines and my particular interest there, I think it might be well to point out that the professor that got me steamed up here, like Dr. Elston in physics did in Pasadena College, was Vince Gianella. All the others were good, you know, and all that, but Vince had a way with him of getting into talking and relating experiences and gettin' you all fired up about what he was teaching. He was teaching mineralogy and petrography at the time. And I think he was studying for his doctor's degree and so forth, while I was there. But I got so interested, I guess in Vince Gianella, that I got keenly interested in petrography [laughs]. And I'd stay late in the evening even, in his lab, workin' on thin sections and studying them and so forth. Although I have a problem with my vision, that is I've got a—I'm partially color blind. It means that I'm not color blind totally, but I have a weakness for red. And I can mix up greens and browns and things, you know. So you'd think this might be kind of bad in petrography because of the color charts and everything. But I found out that I had a certain advantage in a way, because I could detect minute shades of color that were not generally visible to the normal person. Vince and I had a little fun with that. So anyway, I got good grades out of Vince, and enjoyed his course immensely.

I think outside of that, other courses that were applied—lower division work and everything—were interesting to me, and I

think I had a real good background coming up from junior college to Nevada. I had no trouble with that except for one thing: I was deficient in the number of credits that I had. If I was gonna graduate with two years of work from there on, why, I had to find some way of either taking more courses, jammin' in somethin' extra—and that didn't seem to be easy to do with the schedule they had and everything. But, fortunately, in my experience in high school years and so forth, why, I'd been around the mines in summers, and I had done a good deal of assaying with my father's operations, and so I was given the opportunity to take an examination in fire assaying and got that credit behind me right away, and that made up for what I needed. So I started right out as a junior.

I don't think that as far as my interests there at school are concerned—engineering course is always heavy you know, and I guess that most of the engineers—it's historically true that people who take a heavy engineering course play kinda hard. And so my other interest outside of school [laughs] was to play hard, although I don't think I was very far out of line, doing bad things. I was a smoker. But I was a smoker before I ever got into junior college. So I wound up being a heavy smoker. It wasn't 'til maybe fifteen years or so ago that I quit, after smoking heavily, three packs a day or more for years. Took a little doin' to quit, but I did. I had a little encouragement, because I could tell that at that rate of smoking, the ends of my fingers and my toes would start turning a little numb, and if I'd cut down to less than a half a pack, why that'd cure it, but that was misery. And so I gradually managed to—. It took me about two years of fightin' it [laughs] to quit. So that's one thing that I—. And of course I learned to drink, not before I came to the University. I guess I must've learned to have a highball while I was havin'

a good time, while goin' to the University. It's never been a problem with me. There've been times when I drink a little bit too much, and then quit. Because you know, it can easily get to be a habit. And when it gets to be a habit, and you recognize it's a habit, then you better quit. So you quit for awhile [laughs].

[This was during prohibition though.] Yes, but that made it all the more interesting you see. And so you'd get alcohol some way or other, and mix it and so forth. Well, down at Pioche it was Judge Nores with his Pioche drugstore, and the cooperation of the doctor, that he always had "alkehol" on hand, and he made "Pioche Specials" out of pure grain alcohol and soft drinks, you know pop of some kind or other. "Pioche Specials."

I didn't get any steamed-up interest in the girls while I was goin' there. And I think I can say that for most of the engineers that I was associating with in school there, that was typical—that you have this heavy course and your interest in the girls comes later [laughs]. Maybe you were earlier. Well, in Pasadena I was mildly interested in one or two along the line, but I guess I was a serious-minded character there for a number of years (laughs).



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## DEPRESSION MINING

To start with, graduating from the Mackay School of Mines in 1930, summer of 1930. My brother came over from Pioche, where he was at that time, and we had a party one evening. Had to stay two or three days after the school term was over, because my old Dodge had broken down. And I think we went downtown—after my brother came to my graduation—we went downtown with Stub Dubravac and somebody else. I think it may have been Harve Ashby. I don't know. But, one of the valves stuck and pushed a piece out the side of the motor. And so we had to dig up—well, we had to turn to another old Dodge that I had back of the Lincoln Hall. There was lots of area to park out there, and not too many students had automobiles then. And I had a Dodge, a prior Dodge, that I had come up there with. And we managed to tear that motor down and put one together that would work in the Dodge that we were gonna drive home. So that took a couple of days. And we had a terrible piston slap in it, but it was workin' all right.

And I'll never forget the trip back. Of course the roads weren't all paved like they are now or anything. Mostly it was gravel roads and so forth. We went back to Pioche in that, and drove most of the night to get there. And this motor was clapping along with this heavy piston slap, but I was really pretty well convinced that it wasn't really hurtin' the motor any. And when my brother'd drive, why he'd drive cautiously, wondering if it was gonna blow up. And then when I'd drive, why I'd speed it up [laughs], and he thought I was crazy. But we got there.

### **MACHINERY**

Well, that summer the Prince Company was having some churn drilling done, and so we spent some time on that during the summer. But, by that fall (I guess it was) there was a deal put together by my father and Snyder of Combined Metals, because they were after a hoist and compressor and some machinery for putting the surface

facilities together at the Caselton shaft. And the Prince Company had owned a property over in Arizona—the Arizona-Binghamton property— that had been closed down earlier, and was time to dispose of some of the equipment. The mill had been sold, as I recall. And so we went over there. And in the meantime Stub Dubravac had come to visit, and he went along with us. My younger brother Jack, and my older brother Dave, and myself, after fixing up the old Dodge some more—tearing it down and puttin' it together again, and getting a little better fit on the pistons—why, [laughs] we headed for Arizona, and the Arizona-Binghamton mine and took out this equipment.

And the experience over there that is notable was that you go out of Mayer, Arizona over to the Arizona-Binghamton mine on a country road, and you cross the Agua Fria River. And in the course of taking the machinery out, we had a man in Mayer, a trucker, that had a couple of old White trucks with hard rubber tires that came and hauled the equipment to the railroad. And we had to tear the equipment down, put it on cribbing, and then transfer it onto the truck, because we were on a side hill there. And one afternoon we had this Ingersoll-Rand Imperial-Type Ten compressor up on cribbing, down below the old compressor house; and along came a rainstorm. I knew about, you know, these flash floods in the desert country. I'd seen 'em from way up in the Bradshaw mountains when we were out there at Crown King, earlier. You could look over the valleys down in the low country, from—not from Crown King so much as from the Tiger mine, where we were one summer. See these flash floods hit way down the valley. But, this is the only time that I was right in the middle of one to the extent that we were at that time. This thing started to rain, and it rained— you've

heard the term pitchforks or bucketfuls, and it was sure doin' it. And we got into a building there and we were under cover for awhile. And it only rained, I think, that way for a matter of twenty minutes or somethin' like that. But as it—as the rain came down, it undercut the cribbing that the compressor was up on—a bunch of railroad ties— and the compressor landed down on the ground, and that undid days [laughs] work of cribbin' up the compressor. And then, it was gettin' late afternoon by that time, we went to go home, and we got down to the Agua Fria River— just below camp, practically at the edge of camp—and here was a wide stream bed; and we'd wondered if the water ever came up high enough for the cable bridge across there to be—have to be ten feet or so or whatever it was off the stream bed. But sure enough, here we saw the water coming down, and rising. When we got down there, there was two or three feet clear across this wide stream bed. And to my recollection, it must've been 100 feet wide. And pretty soon it started on goin' up and up and up, and it got up within a couple of feet of this cable bridge. And then it was late that evening before it really went down to where we could drive across the stream bed. I guess it was ten o'clock that evening before we could go back into Mayer. So that was an experience that I've never forgotten.

Afterwards we went up to the old Crown King camp and hauled equipment out of there. And I think in my father's experience, I had mentioned this railroad that went over ten switchbacks to go up there. Well, the railroad had been taken out, but the old trestles over these deep canyons in the Bradshaw Mountains—there were a number of these trestles that had been built up for the roadbed, and the old railroad bed was used for just a road, but when you came to these trestles why they had put ties in-between the



former ties to fill it in, but it was very rough, of course. And as you go over this with these hard-tired trucks, why the whole bridge—and some of 'em are probably over a hundred feet above the floor of these canyons you see—and you'd go over this bridge, and it would start getting a synchronous sway to it, with the action of the truck [laughs]. And you sit way up there in those high seats on these old White trucks, look down, and they're kinda scary. Anyway we hauled machinery from up Crown King too, and we got our shipment off. And it went back to Pioche, and that Nordberg hoist is still in there on the Caselton shaft.

We also moved an old, old-time hoist with a big eighty horsepower, early-type of electric motor. It must've been made way back when, oh, when they made a lower speed motor, and they used lots of wiring in it. And it must've been made about 1910 or before. We hauled this hoist over, a double-drum hoist, for the Prince mine. And it was later put in on the Prince shaft by my father. And it had brakes that were just band brakes. The Norberg hoist that was brought over for Combined Metals and sold to them, had post brakes. It would still be regarded as a modern hoist. But this other one was not, and it was put together with bolts. Even the foundation was just bolted together. And the brakes on each drum were band brakes that would brake only if you were going in the right direction with that particular drum. In other words, each side, each drum, if that drum was unwinding and the skip (or cage, whatever you were using) was going down the shaft, then that brake would tend to hold it, because it was wrapping the right way to pull the band around the drum, see. And then the other brake wouldn't be effective for that thing, because the other drum would be going the wrong direction for the band. Well, the experience I'm gonna tell ya is in regard to the

use of this hoist in the Prince shaft later on. And I've forgotten whether it was soon after we put it in or not. We managed to supply camp water for the Prince camp by putting a pump down in the shaft—on the five hundred level; a little sump pump down at the water level, and then another pump, plunger pump, Triplex, pumped it up to the surface, and up to the tank on the hill. And one time I'd go down, and another time my older brother Dave would go down to attend to the pump when we needed water. And so I was letting my brother down the shaft with this hoist, and got down near where I had to stop, pulled on the brake and it wasn't there. The pin had come out [laughs] and I didn't have any brake on that side. And I pulled with all my might on the other brake, and all it would do was just keep the thing from gaining speed. I wouldn't, I couldn't stop the thing goin' down. I visualized, you know, havin' him go down and smash through the—well, we didn't have any chairs on the station and he'd have gone into the water. So I had only one alternative, and I knew that it was liable to blow the motor up. But I plugged, what they call "plugging" the motor. The control, turnin' it one way would be for goin' up and the other way was reverse, see. And so I had to put the motor in reverse of the direction the ancient motor was spinning, for that side of the thing to stop the cage. Well, of course, my heart was in my throat and everything, but I did, I plugged the motor and it got the cage stopped about two or three feet off of the station, up above the station. And, of course, once it was stopped, why that other brake held all right, and then I was able to put the pin back in the other band brake. And my brother kept ringin' for me to let it down. By that time, why, I guess he decided there was somethin' the matter, and he got the pump started. And when he came up, he started [laughs] wondering what the

hell, why didn't I know where that thing was supposed to stop. And of course, it wasn't 'til then that he knew what had happened. But [laughs] that was an experience that I never will forget.

Well, let's see now, I've gotten a little bit ahead of myself because the fall of 1930 really was—let me think now. It was not when we, I guess that was not when we were pumpin' the water. I can't recall exactly. But anyway, that fall, late that fall, I went to work. Took my old Dodge and headed for Bauer, Utah. I was gonna go to work for Combined Metals at Bauer, Utah. I had a sort of a promise of a job from Mr. Snyder. And so I was gonna go up there and work. And I headed for Bauer with my old Dodge. And I got up to, oh, up above Geyser ranch, between Geyser ranch and Ely in the next valley there, and it was the first fall storm of the season and it was snowing, and the car came to a crashing halt with the rear wheels locked, and I found out there was nothin' I could do about it, because it was the drive shaft bearing that was shot. And before leaving Pioche, I had smashed a fingernail, and I had a blood blister under the fingernail; and it was causing a lot of trouble. I finally drilled a hole in the fingernail, and let the blood out, but that caused some infection. Well, after a cold night and first snow flurry of the season, a car came from the Ely way, and I got a ride back to Pioche. Sold the old Dodge to Roy Orr, where it was and as it was for twenty-five dollars. And I took the train to Bauer, Utah.

I worked up there part of that winter, after getting the finger taken care of with frequent trips in to the doctor in Tooele. Well, then I went to work for Sam Craig, who was the mine engineer. So I had some of my first experience there in actual underground surveying and so forth along with Sam Craig. And we were busily occupied catching up old stopes that

hadn't been surveyed and outlined for awhile. And I spent a very cold winter there. Bauer is a terrifically cold place. It's down in a hole in the bottom of the valley. And there's a lead-zinc flotation mill. In the wintertime, why the wind blows through there and drifts the snow. It was pretty cold.

Well anyway, came spring, and they decided that I oughta be sent back to Pioche to work with Clair Hagen, who was the mine engineer at Pioche. And I went down to work there. And right away I was put on underground surveying and mapping and did a little bit of geologic mapping. And pretty soon, Chief Buehler came out, and he was the National Lead's chief geologist. (National Lead then had a controlling interest in Combined Metals.) And he had me run an insoluble residue laboratory on the limestone and dolomite formations of the hills there, to try and come up with the insoluble residues that would be diagnostic as to what formation the sample came from. This would be for the purpose of predicting by surface sample insoluble residues how far down to the favorable ore bed, you see, in the mountain ranges. Well, I had quite a little experience with that, but it was not successful in determining the formation by just picking out rocks and havin' them analyzed. But, nevertheless that experience was valuable, because I learned enough about formations so that with the custom—well, with the universal habit of the faults there to be normal in their relationship (in other words, with the hanging wall on the downside, and the sequence of dark and light limestones with different bedding thicknesses and so forth), it became not too difficult to go from one faulted block to another and identify what formation you were in mapping surface geology.

So, I got then, to be placed on the surface geological mapping, and did some of that with

an engineer shooting me in, and I was running the rod. Well, that didn't last too long because we went then in, of course, into the depression years. And Combined Metals closed down their operation, which was through the number one shaft over at Pioche. And they'd been shipping this ore to Bauer, Utah. But it didn't pay any longer. Even the real good ore was only worth around four dollars per ton back at the mine. And they closed down. But they still were running some development on the eight hundred level of the new Caselton shaft (and as I said before, the hoist that was in there was from the Arizona-Binghamton). And in the meantime they had sunk the shaft down to fifteen hundred-foot depth, and the bottom level was at fourteen hundred; and when that was being done, one of the jobs, while I was on the engineering staff, was regular measurement day in the shaft. Bill Franklin was the boss of the shaft crew. So our engineering crew had these various duties of the surface geologic mapping when we had time for it, and some underground surveying, and measuring up the shaft, and things like that, a certain amount of drafting.

But, when they closed down the operations, both the Caselton and the number one, everything went down, except for some development work on the eight-hundred level in the Caselton shaft, where the CM bed block (ore bed) was at the eight level. And a fairly long drift was being driven out to the south. Well, I took a job then when the things went down, running a mucking machine, a Finley loader, one of the first two that was, I think, made and sold as a commercial model. This Finley mucker was invented by a Mr. Finley, who I think had been working at Butte, I believe, for Anaconda. And Mr. Jim Elton, the manager of the International smelter at Tooele, I guess, was the one that was partly responsible for Combined Metals being able

to get this mucking machine. And it was a brand new type of machine at that time. (That would've been about 1931 or '32 I guess, goin' into '32. I haven't got the dates exactly right.)

But anyway, my roommate was on one shift and I was on the other. And we were running a little competition on who could ever get the most muck out. (I don't know whether I mentioned this before or not.) And we drove several hundred feet on the eight-hundred level. And I did manage to muck more muck than my roommate did, but my secret of doing this was that I'd muck a car with the mucker (and we only had hand tramming and it was about a twelve-hundred foot tram I think, or something like that, out to the pocket), so I'd run with that car out to a relay trammer and do part of the tramming to keep myself busy, and help the trammers. And in that way I was able to beat Rod Phipps, who was my roommate at that time. He was a former churn drillier.

But anyway, that came to an end with the completion of, or coming close to the end anyway, of the amount of development work they wanted to do. And I recall that the Bristol mine had been closed down too. Bristol was a direct shipping property, twenty-five miles north of Pioche. And some of the Bristol people were in there working on the eight hundred level. Wages were pretty low.

## THE COMET MINE

Well the folks, my father and brothers, decided to try and do somethin' with the old fissure mine over on the west slope of the Highland range that the Prince Company had at that time. It had some oxidized lead, silver, gold type ore in it. And there was an old mill there that had been operated for a few years by the man by a name of Smiley, years before. And they altered the mill for milling some ore

and trying to make things go. And so I went with them out to the Comet mine. And we spent time out there during the very bottom of the depression. And we were tryin' to run this property when there was no other mine in the county running. It was the only thing.

Some of the time out there—although we were hiring men at a dollar a day and their board, and they got the dollar a day a couple of years later, when we were able to find it. But they did eat well, and we had a crew that got along beautifully. We had about ten or twelve people, I think. And we mined and milled. And although it was a very difficult ore to mill we did make some concentrates, and shipped some to the smelter.

And one of the incidents in that connection that I think is worth relating, this was oxidized ore, or almost completely oxidized ore, and it was in a hard quartz fissure, and some of the values were locked up in the lead carbonate. And so, although the recovery was poor, we got a half a carload of concentrate to ship. And of course, it was a long, hard process to get that much, so we wanted to ship it. And we had to get this shipped, because we were running short of—we had to have a little cash. And we got Dave Mathews, who had a flatbed truck. He didn't have a dump truck, but he had a flatbed. And he came up, and he'd get the concentrate mucked into the truck, and he hauled it down to Caliente; and we shipped half a car of good grade concentrate through a Mr. X, who also sort of represented the county in collecting county gaming taxes, you know. We had found out that down in Delamar camp, there were some leasers down there shipping a little bit of gold ore, and we found out that we could get this concentrate put in a car, in one end of a car, and one of the small shipments of gold ore in the other end of a car, and send it up to the A. S. and R. copper smelter where this gold ore was going.

The half car of lead concentrate then would be turned around and shipped over to their lead smelter.

And while that was in transit, was when the "bank holiday" took place. And my father was, at that point, back in New York talkin' to some friends of his about mining. The worst time in the world to try and finance anything, but anyway, he was back there, and he knew some prominent people. And the "bank holiday" hit, and nobody had any money. I don't know how he got by. He must have had a little cash on him. But everybody was in the same boat anyway, so it was sort of a laughable matter. I mean you're—there wasn't anybody really, of our people, anyway and in our situation, that was hurting for somethin' to eat. And so we got along pretty good.

But here we'd shipped this car, this half car of ore, and we'd done it under the name of a Mr. X that was handling the shipping of this gold ore, shipped the whole car under his name, and of course the money was gonna come through him back to us you see. And that was the arrangement. Well, we thought that it was about time for the returns to come from this car, and we contacted Mr. X about it. And no, it hadn't come yet. We waited another week, and in the meantime, Dad was back there needing some money to get home, and we didn't have any. And so we waited a week or so and went down to see Mr. X, and by that time it certainly should've been there. I think that, well, probably before we went down, we contacted the smelter, and they said they'd paid it. So we went down to get it. And he was very evasive to start with. And we faced him with the fact that the smelter said they'd sent it some time ago. And he said, "Well," he says, "you know I am collecting license fees from the gambling establishments in the county. It's my responsibility." I don't know what his title was or anything. But anyway,

he was collecting county taxes. And he says, he'd collected quite a bit of that, and due to the bank holiday he didn't have any money, he'd had to use the tax money, but it came to the time when he had to pay the fees to the county. And about that time that he had to submit the fees, why, he received the money from the smelter on our concentrate. And he kinda fidgeted and said [laughs], "Now, of course I do owe it to you, but you know I don't have it." [Laughs] So, I guess we sort of indicated that he'd better "collect some taxes for us," and we'd be back in a matter of two or three days, and give him a little time to get it. And of course we were quite provoked. Hut we went back within a matter of two or three days, and he had it. I don't know where he got it, but he had it [laughs]. Just one of the little experiences you see, that come along in tight financial times. I'm sure that countless thousands of respectable people were juggling any funds they could lay hands on— "Borrowing from Peter to pay Paul" during those days.

Well, this gentleman really turned out to be a good citizen. He'd been an assayer in the past, and he got a job with the state. He had a good reputation. I wouldn't want to belittle his reputation. I suppose that he just got in such a tight spot that he couldn't help himself [laughs]. And I look back at it with a sense of humor more than anything else, because this was goin' on everywhere, you know.

We were able to feed everybody because we were able to go down to Panaca, a little Mormon community, where everybody had their cow, and their milk and their everything. And some of 'em had beef that they could sell—I think the price was under six cents a pound or somethin' for a finished carcass. And [laughs] we had a cellar up there at the mine that we could hang it in. We had a lady cook, Irwin Buehler's wife. Irwin was a cousin to Jack Buehler. And Irwin's wife had been a

cook at Bristol. And she came up there, and she was our cook. And oh, we ate high on the hog, you know; even though times were bad, we had plenty to eat. And one of the things—talk about the present fuel prices and everything. This really didn't bother us very much. We were out there in the hills, and all heating was—any cook stove or anything else—was wood-fired stove, and our problem was simply to go down periodically and gather up some old, dead trees, down below camp, and get 'em on our homemade truck, and run 'em up to camp, and start up the Ford engine that ran the saw, and saw out the wood for the wood fireplace, and the home that my mother and folks were in, and the other stoves around camp.

In the course of that wood gathering and sawing, we had a bad accident. Rod Phipps of the Finlay mucker experience was there with us. And he had a cabin, and was living alone. And he had a little monkey stove that took very short wood. He had to saw his wood oh, about, six or eight inches long. And so he had to have special sawing. And one evening when there was quite a bit of snow on the ground, and we were running out of wood, and we had to go down below camp, and gather wood. And it was a blow, blustery day. And we had quite a time gathering this wood. Got it back up into camp, sawed up enough for everybody, except Rod who had to go on and saw some special wood for himself. And he started to do this late in the evening. And sawing these short pieces of wood, the saw caught and twisted his hand around. He had gloves on, but it cut the back of his hand and cut the ligaments going to his fingers in the back of his hand. Well, it meant of course, here was an emergency. And he had to take off for Pioche, and see the doctor, Doctor Hastings. Well, Rod Phipps had a Ford coupe, and my brother Dave had a Ford coupe. I think they



were identical models. And so chains were put on, and there was lots of snow. And the snow had been blowing and drifting and freezing for a couple of days, and it was a bitterly cold night. In fact, there was a report on the radio that night, that it was the coldest time over the certain areas of the west in eighty years, or somethin' like that. We had a radio out there. The folks got this report. Well, we loaded, there were six of us, took these two Ford automobiles from the old Comet mine. And the road at that time went down to what was known as the Comet siding, down the valley below Panaca, between Panaca and Caliente—down along a long slope. And we got past the range, the high road, pretty well, because a lot of that wasn't drifting too bad. But when we got to going down the long slope from the Highland range to Panaca Valley, this was kind of open country, you know, and the snow was just drifting. Any depression was filled right away, and there was a lot of crust over part of it. And these cars going down there would ride on the crust a little ways, and then drop through. And then you'd have to get everybody to kind of lift the car up a little bit, and get it going again on the crust. Because you couldn't, no way would the car go breaking through the crust in certain sections. So there were sections there that we had an awful time getting through. Then you'd go to another section maybe, where the drifting snow had practically made the ground bare. So it wasn't all that way, but there were some very difficult places. And we had serious doubts as to whether we were gonna get through, for awhile that night. Well, we arrived at Pioche, I think about one-thirty in the morning. And we'd left the camp by five o'clock in the evening. And we'd had some heated rocks at Rod Phipps's feet, and the rest of us were keeping from freezing by activity more than anything else.

All of us nipped parts of our toes or fingers or something. Irwin Buehler was along on that trip, and Charles Thompson was along on that trip. That was the son of Charlie senior of Thompson Merchandise. And my brother Dave and myself. My younger brother, Jack, was instructed to stay in camp and take care of [laughs] the wood and the stoves. And Irwin Buehler felt his finger getting numb when we got down to the valley, got on the highway where we could start making some time, and he bit his finger a little bit [gesture] to see if he could feel something, and he couldn't. But when he got to the doctor's office, why he'd bit half, practically into the bone on his finger, and didn't know it, 'cause it was frozen [laughs]. Well, there wasn't anybody lost any fingers or anything out of being frozen, but everybody had some troubles with the frostbite for a while afterwards. And I remember I had trouble with my heels more than anything else, after that, sort of a chilblain or something, from the frost. And it was a helluva night. We got in to Dr. Hastings, and he pulled the ligaments together in the hand and fixed it up. That was the worst accident that we had while we were, during our Comet experience [laughs]. But it was a memorable experience.

I'm trying to think whether there was any other experience out there that was worth relating. As far as I was personally concerned, I was sort of in charge of running the mine end, and my brother Dave, was in charge of running the mill end, haywiring things together and everything. But, running the mine didn't mean that I didn't also enter into the job of doing some work. I was mucking behind one of the best miners in the county, Reed Hall. Later on I had him working for me out at the Bristol mine, and he was one of my top miners and later an excellent leaser in the mine. We ran the mine at Bristol, later on,

mostly by leasing, and he was one of the top leasers. Well anyway, I mucked behind Reed Hall, in doing some development down on the Comet two-eighty level. We had a vertical shaft to the one sixty-eight, and then an offset to the old Incline. And we were hoisting up the Incline and driving a little drift on the two-eighty. And Reed was the miner, and I was the mucker. And it wasn't until later that I had experience myself as a machine miner—you know, runnin' the drill. Even though I was a graduate engineer, I hadn't, at that time, come up to the point of being a miner. [Chuckles] Well, anyway, that sort of relates the Comet experience.

#### RAILROADING AND THE PRINCE

When we wound up our little operation at the Comet mine, why then we moved into the Prince mine. We had, by that time, a financial arrangement that my father had put together for Combined Metals, and the international Smelting Company of Anaconda's, and the Gemmill family, the principal stockholders of the Prince. Ha had made some stock trades and so forth. Had got ten thousand dollars from them, which was a lot of money in those days, so that we could do some development work at the Prince mine. We had done some churn drilling and gotten an indication of a high block of material in the CM bed, above the three hundred level. And so the plan was to drive out on the three hundred level and then raise up to this block and see if we couldn't find some shipping ore in that block. So, at that point, and this must have—it was in '33, I guess. We moved into the Prince, and my brother, who was pretty mechanically inclined and adept, steamed up the old locomotive or got it prepared. And I got some leasers to work in the mine while we were doing this drifting on the three hundred level. And I took one

shift with the drill, running a jackhammer, a mounted jackhammer on a bar, which we had a machine we thought—. It was a pretty good machine, but the mount was not properly made, and we had a lot of trouble with the mounting. But, I took one shift as a miner, and let's see, Vic Cottino took the other shift. Vic Cottino is now the supervisor for Ely Valley mines—lookin' after things down there. And he's been with that for some time. Well, Vic Cottino took one shift, and I took the other, and we each had a mucker with us, and we drove that drift out there on the three hundred level. Before getting started, we had to rehabilitate a cave-in or a chute that had let loose—fix that up. And we got that done. While that was being done, I set up some lease operations in the mine, and whenever it was necessary, why, I'd go on the opposite shift from when I was running the drill—on maybe night shift I'd be doing that—and I'd take a day shift to run the assay office and see what ore the leasers were producing. Well, they weren't really leasers. It was a leasing type operation, but we were paying 'em wages.

And we accumulated several hundred tons of ore in the old Prince bins before, you know, having to haul it. And then we went with the locomotive to get U.P. gondolas at Pioche and haul the ore. And at that time, why I became the brakeman [laughs], and my brother Dave was the engineer, and Stewart Mahaffe was the fireman. (Stewart had a drinking problem. And most of the time he was a little bit wobbly, but he was real good at what he did all the time. Earlier, he had been the operator of a three-lung gas engine at Virginia Louise mine, when the folks first moved out there to operate a lease at Louise. Stewart Mahaffe was a fella that could always make the three-lung engine go that supplied the air for the mine. And whenever anybody else would have trouble on the other shift,



why they'd call on Stewart Mahaffe. No matter how drunk he was, he could come up there and adjust something, and make the engine go.) Well, Stewart Mahaffe was a fireman on the locomotive; and the old locomotive had a little belly in the firebox where, you know, it's all bolted together with stay-bolts they call 'em, and somebody had gotten the thing too hot with not enough water in it sometime, and there was a little belly in the top of the firebox. But new stay-bolts had been put in. I guess it wasn't too dangerous, but anyway he'd screw down the pop-off valve a little bit, and raise the pressure, and say, "Well, I don't know whether it'll take it, but we'll try a little more pressure," you know [laughs]. Well, we made a few trips to town with that locomotive. Went over to get cars, loaded 'em up, and made the trip two or three times after that. And we had to learn about—well, I think we had a man come up from the Union Pacific Station, which at that time was a division point in Caliente. We had a real good maintenance man come up and look the locomotive over, and show us how to roll the tubes, and you know, and everything. In fact, I guess, maybe we were short of something or other. But we got that oriented all right, so we were able to do the thing.

Well, I remember on one of these trips, taking that ore over to town for shipment to the Tooele smelter of Anaconda. I remember on one of these trips we got to Pioche depot with the ore and started back, and we developed a leak in the boiler tubes. And it practically put the fire out, and we had to coast back down to get more water, but we had to first roll the tubes. Instead of getting back in daylight, why, we were comin' back at twelve o'clock midnight or something to Prince, with the locomotive and maybe a car or two. A couple, I think we hauled up to four cars at a time. I don't recall.

But anyway, it was either two, or three or four, but we were coming back, way late at night. And we hadn't fixed a light on the locomotive, didn't think it was needed, you know. At one point out of Pioche a ways, why the railroad crosses the highway; and at that time the highway was paved with gravel only. There was no hard pavement on it. But it was rather freshly surfaced and the gravel was kind of loose. You know, if a car kept in the ruts, you could go pretty good, but if you got off in the loose gravel, why, it kind of makes you swerve around, you know. Well, we got out with the locomotive, and it was chugging along, and had what they called monkey motion valve action. And it'd go chug-chug, chug, chug, chug, chug, chug-chug; you know an irregular pattern.

And we were chugging along and chuggin' along, comin' up and we had it fixed all right, and it wasn't leaking, and we were makin' it fine—goin' maybe fifteen miles an hour—I don't know. And we came to the highway, and here came a car from the Ely direction toward Pioche, down the highway; and he was hummin'. He was really goin'. He must have been goin' forty-five miles an hour [laughs]. You know at that time, on that highway, that was quite a speed. Anyway, he was comin' down and you could hear his motor almost hum, and we were just ready to cross the highway. We didn't have to stop for him or anything, but he was within fifty or a hundred feet ahead of us when he crossed. But just before he crossed the railroad, my brother reached up and pulled the whistle cord [laughs]. And we were all watchin' this guy, and I guess it startled him so much, he just about wrecked his car, because as he crossed the railroad and realized that somethin's goin' on, why then he started swervin' all over the place—the gravel had him then, you know. And we were just scared to death

he was gonna tip clear over. But he righted it finally, stopped for a while, and we went on by. [Laughs] So that was a humorous situation.

Speaking of railroading; one of the summers while I was still in—this is clear out of place, but it's all right, because we were talkin' about this railroad—the Prince railroad, which was owned at that time—ten mile railroad owned by the Prince, you see.

And during the time that my father and Squires were shipping flux ore from the Prince mine, and after the Virginia Louise experience I think—but anyway, it doesn't matter. They were shipping this flux ore. And one of the summers that I was out there, my job, I think the first summer I was out there, they gave me a job at the Louise mine when they were leasing there, and I was designated the job of running the change room. They had a change-house man, cleanup man and so forth, but they gave me a job doing the plumbing in the change house, because it needed quite a little bit of repair. And so my first, I tell people that my first job around the mines where I actually got pay—I had lots of jobs where I didn't get paid that my father would give me to do. But the first job I had where I was actually on a payroll was this change-house plumber. [Chuckles] That was when I was still in high school or junior college or somethin'.

And another summer that I was out there, why I was given the job of maintaining the trackage—the ten miles. Because in the winter time, they had a section gang—I think three men were on the railroad to maintain it—and Wheeler, the father, Jim Wheeler; James Wheeler and Jim Wheeler. Anyway, Jim Wheeler, the father, was the locomotive engineer, and he was a cripple (that is, he had one leg quite a bit shorter than the other)—and a very flamboyant character. And he used to be very jealous of his prerogatives, and he had to have everything just the way

he wanted it. Howard Squires was the guy that was dealin' with him, and Howard and he had real, tough arguments, because they were both kind of flamboyant [laughs]. I remember that. And Jim Wheeler, the son, Jimmy Wheeler we called him. That was it! Jim Wheeler and Jimmy Wheeler. Jimmy Wheeler, the son, was the fireman. And then they had, you know, the trackage was maintained by this section gang.

But in the summer time, when I was up there, this particular summer—whatever summer it was—why I was given the job of going over the railroad and watching for loose fishplates or places where there were two or three ties broken in the same spot, and having to replace a tie. They had a speeder that I ran, and I was the whole section gang, that particular summer. So, I had a track gauge that I'd gauge—make sure that if there was some danger of the track spacing being out, why I'd put a tie in and pull rails together and so forth. But there wasn't too much maintenance having to be done, and so one person could do it.

And I remember on one particular occasion, I went over ahead of the train and got over what we call the “point” area, and down the other side was mostly coasting, into the Pioche depot. So you were probably a third of the way to Pioche when you got up to the point of the mountain, and then you turn around the “point” and drift down to Pioche. Well, I was on the downhill part, and the train was behind me. And I was goin' along lickety split in the speeder, and at that point I just wanted to keep ahead of the train, because Jimmy Wheeler and his father were behind me, and when they got to the coasting side, why they made pretty good time. I don't know what miles per hour this was or anything, but anyway, they made pretty good time comin' downhill. And I had been on the track working in the morning, and then the

train came along, so I got on the speeder and kept ahead of 'em. And I was going down the other side, and came to an old road crossing where it had some plank laid between the rails for a road crossing, and a chip had come out and was laying up on the rail. And I saw it, but there was nothin' I could do but keep goin', because the train was behind me, and I thought it would kick off you know. But it didn't. It kicked me off. And [laughs] so I was bounced off of the track and bouncing down on the ties, and the speeder was goin' at a pretty good speed at the moment. And it knocked off all the tools and paraphernalia that I had on the speeder. And Jimmy and, no I mean Jim Wheeler, the engineer, put the brakes on, and they got it stopped all right before it got up to me. And Jim got out and helped me back, put the thing back on the track, picked up the tools, and so I got going ahead of the train, and we went on. Well, they still made pretty good time, and I thought everything was all right until I looked down, and I saw that one of the wheels had been bent, so that every time it came around, why it'd just about go off. In fact it looked like it was going to drop inside of the track gauge. You know, one wheel was bent. So I figured out right quick that the right thing to do was for myself to sit back on the opposite corner, so even if that wheel did get within the track gauge, why it wouldn't go down between, and we made it fine into town, and I think we managed to straighten the wheel up a little after gettin' into town. [Laughs] So, just another one of those little experiences you remember.

#### **LOST MINES, LOCATION COMET MINE AFTER GEMMILL FAMILY MOVED TO PRINCE**

And in here comes a little story of a lost mine. These two leasers, and I can't think

of what their names were. I can dig it up somewhere, but it doesn't matter. Times were a little bit rough still, you know. And whenever you could go down into the valley at Cottontail Knoll, and shoot some cottontails, why this augmented the food supply see. So they'd go down in the evening, and they had a gun, and they'd try to get some meat that way. And there was also the sheepmen, Thorley's outfit, down at the springs, Ely Springs down at the bottom of the valley west of Highland Range. And so I think they'd go over and visit the fella, a man by the name of King, an old timer down there. And he had a rock proppin' open the door, that looked a little bit attractive, and he thought it oughta run somethin', it might be ore. And these fellas, these leasers, came back up to my brother at Comet with it, with this rock one evening, and told about King thinking he had found something that might be worth assaying on one of his trap lines, where he put the stake in, an iron peg to hold the trap for trapping of coyotes. And so Dave had the thing laying around over at his assay office over at the Comet mine for a day or two until he was ready to assay, and then he put it through the crusher, and crushed it up and assayed it; and it went over a hundred ounces a ton in silver, I think a hundred and twenty ounces, or somethin' like that. That's what he told me. Well, these fellas, of course, he told them what it was, and they went back to talk to King. But they didn't reveal what the rock would go, and they kept hintin' around about that rock. And of course, immediately they made Mr. King suspicious. And he wouldn't tell them where he got it, see. Well, the Comet thing came to an end and Dave moved back into the Prince, and we were going on with some development at the Prince, on the three-hundred level, which I was heavily involved in and so was my brother Dave. And later on (I don't know

how much later), after the leasers had left and everything, why Dave and I decided to try and run this thing down and you know, go see about it, and tell what the story was, and see if we couldn't find out where this came from.

Well, in the meantime Mr. King had died. And there was a younger fella out there that was in charge or had been lookin' after things. He happened to be in Panaca at the time, and we went and saw him. And so he thought he knew where Mr. King musta gotten that rock. And we went out with him across the valley from the Ely Springs, and he took us over to a dark colored lava flow, and said he thought that must be where Mr. King got this rock, 'cause the rock was kind of a dark color. [Laughs] And of course, there wasn't, didn't look like there'd be anything in that. So whatever it is, whatever that sample came from, that story is still unsolved. There's a little lost mine story for you [laughs] My suggestion to anybody that wanted to look for that would be to look for a showing somewhere or other of oxidized manganese, you know, black material. And the reason I say that is on account of a later experience in that general area down there.

Another lost mine story, since we're on that subject in our present discussion, is the story that Ed Snyder tells about a great big man by the name of Freudenthal, Ed Freudenthal, that was a mining promoter and prospector in Pioche, and a very successful promoter. How he got ahold of people that would come, you know, from the east or somewhere, and invest in his ventures.

Supposed to be a very heavy man, a very large man. And when he'd get on a horse or a mule—it may have been a mule that he rode, I don't know—why, he was heavy for almost any horse. But, it was awkward for him to get on and off of his animal. So he had a long-handled hammer that he could

knock a piece of rock off [gesture] with, and he carried tongs (like blacksmith tongs with a long handle), that he could reach down and pick up a piece of that rock. And he'd go out with a jug of whiskey in one saddlebag, and the other saddlebag for the specimens, or rocks, and whatever. And he'd hang the tongs and the hammer on his outfit. And he might be gone two or three days, because, you know, sometimes he'd hit the bottle pretty heavy [laughs]. And he'd go where there was a spring or something, and he had, of course, a little bit of food to eat. But, he went on this one trip. And when he came back from his prospecting, he always had some samples, and it was at the time that Ed Snyder was running an assay office in Pioche. Now, this must've been in, oh, 1913, '14, '15, I don't know, somewhere back in—. (Because it was before—. You see Ed Snyder— somebody could tell us when he graduated from Michigan School of Mines, and was to run an assay office in Pioche. And he also, at the same time, went around sampling dumps and looking at different properties, and shipping a little ore now and then. So that he, you know, was always busy, at that time, that was sort of his occupation, soon after gettin' out, graduating as a engineer.)

And Freudenthal came in with the sample (with several samples I guess). But one of his samples ran pretty good in silver. I don't know how good. Let's say it ran real good in silver. Let's say it ran a hundred ounces or fifty ounces or something. And I think it was supposed to run pretty good in copper at the same time—silver, copper ore. And when Snyder assayed it, and told Freudenthal about it, why, Freudenthal heads out to locate a claim. And he was gone that time two or three days. Came back, and he couldn't find it. And after some discussion, it appeared that he had probably been hittin' the bottle pretty hard when he found it originally, and it was

too vague in his mind, so he never did find where that came from. And, I guess others, along about the same time, went out and tried to go over the area that Freudenthal thought he was in when he found it; and nobody ever did find it. So that's a lost mine! [Laughs]

Now there are two lost mines in the Pioche area, that is the Lincoln County area. I have an idea—that is, my impression, from what Snyder said—that Freudenthal was out toward the Jackrabbit, and west of that area, maybe even beyond the Bristol range. I don't know. But, it's somewhere off out in that area. It might've been, well, in the hills clear across the valley out there. I don't know. 'Cept, Freudenthal being as big and as heavy and everything, as he was, it might've been that this was a showing somewhere in the north end of the Bristol range. So if you want to go lookin', why you can go out there. And I'll tell you where you can find all kinds of good specimens, just right on the surface of the ground. All you gotta do is walk over where the Bristol tramway goes from Bristol to Jackrabbit, and it's abandoned. And some of the towers are down, and the cables are down and everything; but if you walk that tramway, every little while you find ore, in the years that that tramway operated, why a bucket dumped, and there's a little pile of scattered ore, mineral scattered around. And if you could gather all that together, you could make several shipments of pretty good ore to the smelter, if there was a smelter to ship it to any more [laughs]. But, you can find some beautiful specimens along that old tramway, if you know how to recognize the ore. Some of it that would polish very nicely, copper specimens.

So, the lost mine that I would go lookin' for would be under the Bristol tramway [laughs]. Knowing that you're interested in rocks and things like that, I think you'd have

fun lookin' there. Now, that's a little secret. It's all right to have it in the write-up for future, but for right now let's keep it a secret [laughs] until after next year or so, because I'm gonna go out and find some specimens.

\* \* \* \* \*

Well, let's see. This is still during the time, of course, of my father's existence, and we've gotten clear off into a tangent area here of the railroad, and I even went back, you know, to earlier times. And later on (before closing of this railroad deal), about the time that the deal was made to raise funds for the development in the three hundred level of the Prince—. (Where Dad got money from Anaconda and Combined Metals in trade for some stock that he had optioned from Mr. Sherman and his associates, you see. And just what the dealings were there I can't relate at all because I don't recall it. I don't know that I ever knew.) But anyway, in that deal Anaconda and Combined Metals each wound up with 800,000 shares of Prince stock; and my father and family (at that time, it was all in the name of my father) had about an equal amount, I guess, and miscellaneous Prince stockholders had the rest—a three million-share corporation. And the preliminary arrangements were then made to negotiate with the Union Pacific railroad to take over that ten miles of railroad, because Combined Metals was in the process of thinking about building a mill over on the Caselton side of the mountain, sinking the shaft and all this I guess. Now that thought of Union Pacific taking the railroad over may not have generated at that particular time that money was secured, and probably didn't because that was pretty early in the game. But later on it was negotiated, and the Prince Company deeded the Prince railroad to the Union Pacific at the time the Caselton



mill was being contemplated, which must have been after the power line was in. That's right. And it was at the time of negotiating the Lincoln County Power District thing, I think—now I'm straight on that—that the Caselton mill was then considered, and it was, the railroad was to be deeded to Union Pacific, and when the mill was being built, this happened. And the Union Pacific went in and changed the rail from fifty-pound rail or fifty-six-pound rail to ninety-pound or a hundred and twenty-pound, I don't know. Anyway, heavy rail—much easier to maintain. So ever since the time of the Lincoln County Power District completion and the— well, completion, no, that was in '37 that the Power District was completed. But the Caselton shaft development continued and the Caselton mill was finally completed in 1941. So you see, it took time to do these things. But by that time, the Union Pacific had the railroad and had rehabilitated it, and ran the main, or branch line facilities of the Union Pacific, right around to the Prince and Caselton.

### PROSPECTING

In 1934, we had come to the point of concluding our development and found no ore that we could mine in that drift I was telling you about; and so there was a period of time there when I didn't have any special work to do, and I took to going around looking at properties. And I examined a gold mine in Baja California that my father and younger brother had looked at and gotten a pretty good gold assay out of the little vein in the Escondido mining district, south of Ensenada. And so I took my old Dodge and went down to examine this shaft. They only got a surface assay. So I took my old Dodge and headed out, and got down there and found that the area was inhabited by a few natives, and there

was some company that had some of the properties there; had a watchman—a Chinese watchman—that was also a cook. And so he did the cooking, and I had that taken care of for me. I had my bedroll. But I had to use my poor Spanish to get the natives to set me up a hand winch, you know, in the old style—they had one somewhere around there. We had to mount it over the shaft. And I had to get a sling and go down this seventy-foot shaft. (I should have called that, a hand windlass is what they call these hand operated things, you know. It's a wooden pole with a rope wrapped around it, and a handle that goes out and gives you leverage so that you operate it between a couple of standards of wood with notches cut in for the shaft that goes through the pole. Yeah.) And anyway, they set this up, and we had a rope, and we fixed a sling; and I went down the untimbered shaft. The samples, when I got back to the Prince, why I started up the assay office and assayed the samples I'd gotten down the shaft, and started in at the top with twenty-foot, no not twenty-foot, probably twelve-foot width of the vein, running fairly good. I've forgotten what, but as it went down, it got narrower and it would up at the bottom of the seventy-foot shaft about eight inches wide and a trace of gold [laughs]. Well, the shaft was respectable size. In fact, it was on a slight incline and rather large at the top, because of the width of the vein, so I had to have a pole, a forked stick that I'd force myself out to the hanging wall where the vein was, to sample it, on my swing. I'd push myself out and put the rope on the fork of the stick so I could hold myself over there to sample the vein. And I sampled it every five feet down the shaft. So that was that. We didn't do any more with the Escondido mining district.

But the other trip was a trip down to see Mighton's prospect, which my father had known of years before. And he wanted me

to go down and see this. Well Mighton had had a deal or two on his mine, and they had driven an adit in there several hundred feet on flat lying probably thirty-five or forty degree dip contact between metamorphics and an Alaskite type material. Sort of an acid type intrusive. And this had disseminated specks of pyrite throughout. And apparently this pyrite carried what gold values were in it. Up at the surface, it had assayed pretty good, probably from weathering and concentration. But, when you sampled the material in this adit, it was fairly wide, and would've constituted a pretty good size ore body, but pretty low grade. I think it went about two dollars and ninety cents a ton or somethin' like that. It might be of some interest in the future, I don't know.

But anyway, when I got to Mighton's cabin and went in, why, I found out that he was living on wheat. The county would dole out, you know, chicken feed to anybody that wanted it. The government was giving free food to people that were in need of it. But, in those days, compared with today, there was quite a difference in the program. In those days, they gave you the *bare* necessity. They didn't give you the money to buy it with or anything like that. They gave you—like in this case, he was living on wholegrain wheat, see. Same as you'd feed chickens. And that's what they'd give 'em—a sack of wheat, when he asked for it see. And presumably he'd be raisin' chickens. But he didn't. He was doin' his prospecting and just living. And I found out that they also gave 'em—these old timers out in the hills down there—tried to give them about a day, at least a day every month of road work, you know to keep the roads up. And they'd go pickin' out boulders on the roads, and cleanin' up. And so when he'd get a little money, he told me that he used some of this money to buy some butter. And he

liked butter on his wheat. But he'd soak it you know, and then cook it. And if he had butter, he'd use butter on it— otherwise just soak the wheat, and cook it. It'd swell up. I tried it. And you know, before I got away (I was there I guess ten days or something, or at least a week; I don't know), and I got kinda used to it. I opened up my box of groceries, and we divided it, but I kinda liked that wheat. I got used to it. You take a handful of it you know, and when you'd eat that, you felt full. I think it was pretty nourishing. And anyway, that's the way relief was doled out in that particular desert area, at that time. And of course, he was far, far better off than some of the wealthy people, people who had been wealthy down in southern California— some of the cases I know about—where they'd lost everything they had, but they didn't have a remote idea of how to get by, you know. And sometimes there'd be suicides, and it was a mess. So this old fella out there, he was doin' great. He was happy and everything.

But 1935 rolled around, and I've forgotten when I did what (but it may be I might have looked at another thing or two during that time), but it was also during that time that F. W. "Slim" Anderson, geologist for Anaconda in Salt Lake, came down. And Slim and I mapped all the levels of the Prince and the Virginia Louise mine—both mines—and took eight hundred samples of the remaining ore in the mines, and had them assayed at Union Assay office in Salt Lake. So we made complete geologic maps on a scale of fifty feet to the inch, and separate assay maps showing where all of these samples, cut samples, were taken. And about that time, I guess it was in the spring of 1935, I took that information and independently worked up an ore reserve estimate—called it an ore reserve estimate—of course, anything that isn't marketable in mineral, that you can't sell at the time, is not



ore, it's protore. But at any rate, it had been ore, and it still sits there in the mine. It hasn't been mined yet. But I worked up the ore estimate for the mine, or whatever you call it—protore estimate. My brother worked up the past history of the mine and the statistics on former shipments and everything, and mining costs. And we put that together in a report that's been used ever since, for the oxidized iron, manganese, lead, zinc, silver reserve of the Prince and Virginia Louise mine. And so that was all written up in a bound report and distributed to everybody concerned.

### BRISTOL MINE

About the time that was in the process of being completed, why, Jack Buehler from the Bristol mine, came in and visited us, and his supervisor, his superintendent at Bristol, Bob Bonamarte, was leaving, and going to the Philippines. I think he went to work for Benquet Consolidated. I don't know how you spell that, but it's one of the famous gold mines in the Philippines. I think he was going over there, had a job with Benquet. And he was a little behind on his surveys. And of course, being superintendent, he was also the engineer. You didn't have a staff, you know. And so Jack wanted to catch up the surveying, and he came in, wanted to know if I would take the job for a couple of weeks or so to catch up the engineering. I don't know just what he really had in mind, but anyway, I went out and I think I was given an understanding that maybe I'd be there for a month or so. He didn't know how long it'd take me, but my salary would be a hundred and fifty dollars a month, which looked awful good [laughs]. Bristol was just getting started again, or had just gotten started again, to doing a little bit in the way of shipping ore, and they had started doing a little bit of leasing in the mine. I think

they had—I'm not sure whether the leasing was very extensive. I think he had started a couple of leases.

And I went out there and did catch up some engineering work. But right away, Jack was goin' off on a trip for some reason. Oh, I think he was connected at that time with doing work about the powerline, see. And so right away, he asked me to stay. Even before I finished the surveying, why we got acquainted, and I guess we related pretty good together. I was anxious and he was, too, I guess [laughs], to have some help. So he asked me to take charge of the works while he was gone, see. And Al Thorpe was the accountant. And of course, he was keepin' track of the books, and the shipment records and all of that. And so really what I did was take one shift, while the shift boss took the other part of the time. And well, I had a lead miner that could take a shift, at one point. So I stayed on there as—really developed into being the superintendent at Bristol, and also the geologist, the engineer, and so forth.

And so I was used to platting underground geology, and had a fair amount of experience at it by that time. So I kept my notebook with me going through the mine in a supervisory capacity. And when surveying needed to be done, I'd get the transit and run the survey. I'd keep the maps up anyway with the Brunton surveys, and geologic mapping, at the same time that I'd go from one place in the mine to another supervising. Maybe I'd go (allow headings to go) for quite a distance and a lot of complicated level work before I'd ever take the transit and undertake the job of actually catching up the transit surveys. I found that Brunton work came out plenty good. It was at least as accurate as the geology [laughs]. And we started building up a set of leasers—mostly these were Italian miners that had been there before, before the mine was closed down

earlier, and they had come back. And they were back on the job, and I guess they'd been just livin' as best they could in the meantime. Well, Buehler and Bonamarte had a pretty good crew built up of experienced men. Two or three leases were going in the old stopes, and Bristol had a day's pay crew working in what was known as the twelve forty-five winze area.

The mine areas were designated, and this was a good plan. They were designated by the hundred-foot-square blocks in accordance with the coordinate system of the surveys. And so when you'd look at any particular level like on say the twelve hundred level, why you'd start in with 1201, 1202. And this company work was twelve hundred forty-five block, as I recall. This twelve hundred forty-five winze started out in that block, you see. And it went down four or five levels, on probably about a fifty-degree slope or something like that. And they had a crew of day's pay men in there.

Dominick Belingeri was the blacksmith; and he was a pretty good all around mechanical hand. He could take a shift supervising, if you needed to have him do it. He kept the steel up, and he kept the tram line in repair. Mont Epperson was the tram man—we had a tramway strung over the mountain, 8,000 feet long. Mont was the tram superintendent. And Adair, Bill Adair was in charge of running the railroad, the narrow gauge railroad, from Jackrabbit to the Pioche depot. And I think Clessen Buehler, another relative of the Buehlers—I've forgotten just what relative—a younger fella—was working with Adair and running the railroad.

So our process was mining, and hoisting, and sorting. We had us an old beet sorter fixed up for an ore sorter over the tram bins. And most of the ore that came out of the mine, except for the lease ore (which they kept clean on their own), any of the company produced

ore was not kept as clean, naturally. And this is one point where I got a very good feeling for the difference between a man doing a thing for himself and doing it under pay for somebody else; and it's come in very useful later on. To see how a real good leaser could go into any old stope that the company had operated (locations that became uneconomic for company operation), and the right kind of a leaser could go in there and still make himself some good money under a split-check leasing system; where the company would supply the air and the machines and all of that, and they would produce by knowing the ore themselves; and they'd bring up samples, and they'd be run through the assay office—wouldn't charge 'em for the assaying, but let 'em know what their samples were running.

Well, during the course of this time, up until the time my father died, I had only gotten introduced to Bristol. And then I had to go leave for Los Angeles on a trip to his funeral. And at that time he was in Altadena, and he had a heart attack that killed him, although he'd gotten over his illness largely, his former stroke. He had already set up an office in the basement of the house on Boulder Road in Altadena. And there was a vacant lot next to the house, and there was an incinerator there, and he took a bunch of papers he wanted to throw out, and put a fire in the incinerator, and caught the brush afire, and he ran with water to put it out. I guess he got too excited. My mother was at church at the time. It was on a Sunday. So he just keeled over dead. Well, I guess the neighbors saw the fire and everything, and that's how he was taken care of. So that was, I guess I've completed the period of time my father was still alive with that statement.

Then I went on at Bristol, working night and day really. I'd do my engineering calculations, work up my notes at night,

and I'd figure ore values. Then when Jack Link, the assayer, would go on a vacation, I'd put somebody in supervisory capacity or whatever I was doing in that regard, and I'd do the assaying for a couple of weeks. And when the blacksmith, Belingeri would leave, why I'd do the blacksmithing. And I'd learned to do the blacksmithing out at the Comet mine, where you were really doing it for pretty hard quartz ore. And you temper different for the hard ore than you do the lime ore. But, I did have the experience. And I used to take quite a pride in being able to do change house plumbing or railroading [laughs]. But this was typical, I think, of those days. Anybody trying to run a small property just had to be a jack of all trades, you know. And it was good experience.

So we had a period there then until starting up the Prince mine (after the Caselton mill got built. Well, the Caselton mill was completed, I think, in 1941. So that, you see, the rest of the time from '35 till '40—kinda breaking this off at 1940 when I was at Bristol). So coming back then to my experience there at Bristol, there were several instances of finding a new ore body in a very interesting mine. And the underground conditions are real attractive in that mine, because you see a new face every day, and maybe it'll be a little streak of ore that you dare to follow, and maybe it'll open right out into a big face of ore. This experience was one of operating a mine where you never had any ore reserves, really. You were faced with trying to estimate where you were gonna come out just by the number of faces that were productive at the particular time, because the ore bodies are very irregular, and they're like a, almost like cavities in a tooth. They just go anywhere see. And you have great difficulty projecting an ore body from one level to another—in going down, say, if you're on the ten-fifty-level, and you want to open up the

fifteen [hundred] and you've got a drift out in that general direction, why you think you can project it (the ore), but usually you can't; and you have to drive a raise and practically break through into the stope above before you start following it down. And then you take a short bite at a time, and you follow the ore body down to the next level. So there was a lot of interesting work in that mine.

But coming back then, to the ideas developed from our leaser experience at Bristol. Ever since that time I have recognized—I think I probably knew it before then 'cause I'd done a little—I left that out, but we made a shipment or two when I was in high school, summer vacation. But I'd learned, you know, the attitude of a leaser, and then seen the attitude of the man you hire. When I went out to Bristol in those days, we always had men on the rustling line too. And if somebody let you down, or went off on a binge and got drunk for a day or two, why when he got back his job was replaced from the rustling line, see; *unless* he was a real good, careful miner that, when he was sober, could mine where he'd keep ore clean and do a good job. Well, of course, I always took them back in preference to a green man. But, trainees usually came from young fellas from farms over in southern Utah. And some of those would right away develop into real good men. And I remember particularly, a couple of those situations, where those boys, through just a little bit of experience, would want a lease, and take it, and through their energy and enthusiasm they'd do a good job, and make some good money. It doesn't take too long if a fella wants to do it bad enough, see.

Well, Bristol involved a number of experiences. I remember a case of one fella that was a leaser—a poor leaser—he wasn't too good at it. He had lots of enthusiasm and would undertake development, hopin' to find

somethin' behind the rock, and didn't have much luck doing it, you know. But, he did manage to make some shipments, and was eeking out a living with his leasing. And he fell in love with a floozy and got married to her. He wound up blowing off a finger to get the compensation to buy her a ring [laughs]. And I never will forget the party that was given for him. And he was highly sentimental about this gal you know. Everybody knew what she was. And she was right from the red light district really, but she bounced around the country a lot in other camps, and wasn't known to Pioche too well, but you could tell almost by a very brief encounter with her what she was. Well, I'm trying to think of the song that this fella—the one that I'm talkin' about—had played at this party. It was one of the very sentimental songs, and I can't think what it was at the moment, but anyway, we used to laugh about it.\* Because he found out soon after that, when he didn't have any money left, why she was off and gone you know. And it practically broke his heart.[Laughs]

But this reminds me of another story that goes—and it is supposed to apply to a fella that had been at Bristol before I went out there, and supposed to be a true story. This miner was going with one of these gals that had a shady reputation; and she was rather plump. And he'd take time off from work, and lost out two or three times, and had to hit the rustling line thereafter, in order to get back on. But nevertheless, he was very enamored with her, and finally he took time off and got permission, and was gone for a week or so. And when he came back—and came back after a time and got on again—the boys asked him about, well, did he get married, you know. They knew he'd been gone with this gal. He says, "No. No." He didn't get married. "Well, why not? I thought you had it in mind that while you were gone, you were gonna get

married." "Well," he says, "I," he says, "Really," he says, "I found out that she's just nothin' but a great big low-grade proposition." You know that's a term applied to mining—a big low-grade proposition [laughs].

### **MINING ACCIDENTS**

Well, those Bristol days involved not just all fun. We had some serious accidents. We had one man that drilled into a missed hole, who had a big family. A man by the name of Wiley. Had a big family. He was drivin' a little raise in the stope area below the twelve hundred level in the twelve forty-five winze area. And we were operating two shifts; and the man that came before him on the other shift had drilled a raise round; and when Wiley went in there one corner of the raise round was not removed. That is, apparently, it looked like it hadn't been drilled out. And he looked for a hole, couldn't find one, thinking, you know, there might be powder in a hole. And he called in his adjoining miner that was workin' somewhere near and asked him to look for a hole. And neither one of them could find where there'd been a hole drilled into that corner.

But, his partner that he called over there, said, "Well, nevertheless, you'd better not drill the corner, because you can't tell, there still might be somethin' there."

And so he said, "Well, I won't then." So Wiley went ahead and drilled his round, and came time to go for powder, and Wiley, I guess, became very nervous about what kind of a round he was gonna break.

So this other miner said, "Let's go for powder;" and Wiley said, "Just a minute," he said, "I got one more pop to drill." And he

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\*Recalled later song named "Gold Mine in the Sky."

turned around and drilled into that corner, drilled into a missed hole and it killed him. One of those things that really, how would anyone but Wiley have prevented it see?

And here he had a big family. At that time, the way NIC handled their insurance, why that was totally charged up to the Bristol account, of course, to educate those kids and everything. Well, that was kinda bad. We had previously had one other accident by a single man, who had ignored a loose boulder that was over in the area he was workin' in— just had refused to bar down. He was kind of a bull-headed miner. But he was single. That hardly affected the rate of Bristol. [Laughs] Boulder fell on him, and crushed him; and I think it cost a hundred and fifty dollars to bury him, and only that went against the rate. Well, I began to see, I began to feel that when I looked at the insurance going up that this was not really—fundamentally was a poor way to have this insurance set up, because it would tend to make the employer turn down people with families [laughs] and hire single men because they would cost less, see. So that began to bug me a little bit.

But anyway, that wasn't the only serious accident we had. We had a miner that was anxious to get on the skip and be a skip tender. Well, coming back, before him we had a skip tender that had been on the skip tender job for some time. And this is an open shaft on rail on a slope of seventy-five degrees or so; the shaft is seventeen hundred feet deep. When I went out to Bristol, the bottom level that we were operating was, I think the twelve hundred level. And we wanted to go down to the fifteen hundred, shortly thereafter. I don't know what year it's been. In going down to the fifteen hundred level, some of the bulkhead was obviously rotten, and so we had to do a timbering job to change the door. You lift a door at each level to go down

to levels below, and you let the door down, and let the skip set on it when you fill the skip. Well, the door under the skip was rotten, and the timbers that supported the framework that the door let down on, and everything, needed to be changed. And so, one of the experienced shift bosses, Joe Elsmore, an all around timberman miner, along with the skip tender was instructed to change the framework. And the carpenter built a new door and it was sent down. And all this was changed. And the skip tender went down to load out from the fifteen hundred level. (We'd been loading out for some time after the bulkhead had been changed.) And in the process, after you've unloaded a pocketful of muck, the process of getting away from there to another level would be to lift up the door, and the skip tender that was pulling the chute, would jump from his little platform down onto the platform alongside the door to lift it up after he'd raised the skip. Well, he jumped down, and when they had changed the timber, they thought that the two stulls on the end were in good shape, because they'd used a pick and tested 'em, and they were all right, but unfortunately they failed to test right back at the end where the stull went into the hitch on the foot wall of the shaft see. And they decided not to change that stull on that end. They didn't go ask anybody or anything. They just decided that it was okay. But it wasn't. And when Wiley jumped down onto that little platform alongside of the door, why the stull gave way, and he fell from the fifteen hundred down to the bottom of the shaft, below the seventeen hundred level, and of course, it killed him. And that was my, I guess that was my second experience of overseeing a fatality. And right at the time that this happened—it was at lunch time—that's the reason he was getting away from the pocket, and the skip wasn't running. And Irwin Buehler and I



came out to the station I guess on the twelve or somewhere, and waited, and waited, and waited, and no action. We couldn't get the skip, so we hiked down ladders to see what was the matter, and that's when we discovered it. And so we had to go down below the fifteen hundred, down to the bottom of the shaft that hadn't been operative for years. And you couldn't run the skip clear down there because even the stulls under the rail were rotten. And so anyway, Wiley had to be pulled up with a rope, to get him out of there. So that was a bad one. And he had a big family.

And Wiley was replaced by another skip tender, a miner that I started to mention before, who had been wanting the skip job. You know, he'd like to get that instead of being a miner. And, well, we gave it to him. It turned out later we learned from his mother he had had fainting spells when he was a child. And he'd had this trouble even while he was older—and I think maybe some of this was why he didn't like being a miner—running a jackhammer. But he was a nice fella. And he had a good-sized family. And apparently his trouble hadn't been caught by the doctor; he'd been passed. And he hadn't said anything about it to anybody. Well, he wasn't skip tender very long until one day when we were transferring some rail from the surface down to the two hundred level of the mine; and Mont Epperson, the train man, was helping to do this, because the trains didn't happen to be running that day. And so he was, Mont was loading rail up on the surface into the skip, and then it was the skip tender's job to help unload it from the skip down on the two hundred level. Mont would ride the skip with the rail down to the two hundred; and then he'd get off on the two hundred, and the skip tender would pass the rail to him, and he'd pick the rail and carry it back in the drift, and lay it down. Well, he

took the rail out—I guess it was on the last piece, I don't know. But when he came back, why the skip tender was gone. And of course, there wasn't anyplace for him to have gone except down the shaft. Well it wound up, at that particular time when I was ready to go down the shaft, and Jack Buehler and Mr. Ed Snyder was in camp and were gonna go down to see something underground; and we were all up there ready to go down when Monty (Mont Epperson) was handling this rail. So Mont was gonna take that load down and come back. And when he came back, he was all pale and excited. The skip tender had disappeared, and he must have gone down the shaft. So anyway, I went with Mont then, and we went down the shaft. And we picked the skip tender up in pieces from there to the seventeen hundred. And that was a bad one.

We had one other one that was a single man, a leaser that was inattentive to little dribblings from above, working in a stope area. And same thing as with the first single man that had gotten it. You know, if a man won't protect himself—I've said many times since, that safety comes with the man at the face, not with inspections near so much as with the individual that's responsible for his own safety. And you'll note that in every case that I've mentioned, it was a matter of either not barring down for your own protection, and there's nobody else in the mine—the supervisor may come around and warn you that you haven't barred that rock down or something (and I've done that many a time), but he isn't there all the time [laughs]. And the man that's working in the working place is the man that has to watch it, for his own protection. Or if there's a dribble, and showing somethin's liable to fall, well you don't work under it, see. And he's got to be the guy to watch his neck, even though this later one, single man, the leaser, was an experienced

miner. And his partner warned him when he said, "Well, don't go out there," he said, "it's dribblin'." Well, he went out anyway with his wheelbarrow of ore to dump it [laughs], and that's when he got it, see.

And in these other two cases, the later skip tender was certainly at fault for not sayin' somethin' about his problem, havin' fainting spells. And the earlier skip tender, I don't say that he or the man that helped replace the bulkhead—. It isn't a thing where you'd say they didn't think they were using caution, but the lesson that I suppose you'd learn out of this is that if you got—you certainly oughta test the end of the stull that's in the hitch if you're gonna say it's okay, you know. But they thought it was in good shape. And so it isn't somethin' that even a safety man, if he were on there just for that purpose, on the crew, might have missed that one. And the other ones certainly you know. Well, a safety man, I suppose, might be more particular about a man's health record, but without knowing and with the man hiding it from you [laughs], I don't know, see.

So these are things, and I've said ever since: yeah, you can pass laws and you can print code books on safety and everything, but mining per se, yes, it's more hazardous than a lot of occupations. I don't think it's more hazardous than flyin' your own plane. I don't think it's more hazardous than goin' skiing. I don't think it's more hazardous than a helluva lot of things that people do voluntarily. And if you're gonna be an underground miner, you should just recognize that you're layin' yourself open to more hazard than workin' behind a desk, or than a lot of other occupations. And then if you decide you want to do it, there shouldn't be anything to prevent you from doin' it [laughs]. You do it because you want to. So this is a big factor that I see in the thing. And I think the public generally

is led to believe that the underground miner is being unnecessarily imposed on, by this hazard, you see. And I have never liked that attitude of the media in talkin' about it, because it just naturally is a more hazardous business, and if you don't like the hazard you shouldn't be a miner. And in this country, with the freedom to move where you want to move and everything, I guess— [laughs] that's the attitude I have anyway! Certainly I've spent many years in underground mining and knew about the hazards and watched my own safety and tried to watch the safety of the others.





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## CHARACTERS IN PIOCHE, NEVADA

I guess some of the other things that should be put in here would relate to community, and some of the stories that floated around, you know.

And one of the characters in Pioche that I grew to get acquainted with and became a very good friend of mine later on—his name was Owen Walker, a highly imaginative character. He was good at anything he'd tackle; a good mechanic, a good miner, good, almost anything. And he could have been a whale of an actor. He could spend the most ordinary day, and when he'd tell you about it, why you became enthralled because of the way he'd tell you, you know. And Owen Walker's father was an engineer, a self-made engineer—Frank Walker. I don't know, I guess he'd had a high school education. Maybe as much as that, I don't know. But anyway, he was the county surveyor. He probably hadn't had a high school education, but he probably had, you know, gone further than just grammar school perhaps. But he was the county surveyor, and the water right engineer, and so forth. And everybody that needed somethin' done

called on Frank Walker. And Owen Walker was one of his boys, and he had a couple of others. Owen's brothers—one of 'em, Orville, we called "Plute" Walker was [laughs] one of 'em, and he was a hoist engineer. And anyway, Owen was the one that I'm gonna tell a story or two about.

The story is about Owen Walker and Chet Cook (long before I was at Bristol. It must have been before the '20s. It was in the days of the Model-T Ford trucks, you know—that kind of thing), Owen and Chet had some sort of a concession in the Company store at Bristol. And they sold beer. And the workmen would come in and play cards, and it usually was the old company store, you know, that always skimmed off a good part of the men's wages in the store for overalls and whatever they wanted to buy, and for beer. And Owen and Chet had this concession in the store out there. Well, they were doin' pretty well with it, so the story goes; and so they decided to get beer wholesale, rather than goin' in just to one of the clubs and buyin' their beer, why they had a shipment

come in. Well, when the shipment arrived, why, Owen's wife (and possibly it was due to his bein' away from home) had gone home to her mother. (I guess maybe she might have been havin' a baby, I don't know. They had several children, three or four.) Anyway, she was away. And so Owen said to Chet, "Well, we'll just store it in my house." They unloaded the beer, and it amounted to more than one truckload, so they hauled the beer up and put it in the living room of Owen's house, up on the hill in Pioche. And they took the last truckload right on out to Bristol. And when that was gettin' low, they came in to get the next truckload of beer out of the living room. And they opened the door—Owen's story goes that they exclaimed, "My Cod. We've been highjacked." The beer was halfway down from the ceiling. And they started to look at it, and unload it, and they discovered that the weight of the beer had caved the floor in [laughs]. So of course, hearing Owen tell that story, with the embellishments and everything was great.

And also there was a story about runnin' off of the Dugway Road with this truck full of beer and everything. Anyway, Owen could really tell ya about that.

Another one that happened, I guess, during the thirties, it must have been. You know, everybody got their radios going, And it was a great thing to have a long aerial. Well, Owen's house was on the slope of a quartz side hill, there. And up at the top of the hill, must have been over a thousand feet away from his house. And so he got a big pole up on top of that hill, and stretched a wire all the way down to his house for his radio. And he had—he was real proud of his radio reception because of his aerial. And a storm came along and lightning hit this aerial, and it came down into the house, set the curtain on fire (I don't know how, but anyway), and

it knocked out his daughter. And she was knocked out and fell on the floor, and his wife was screaming, and things were in an awful shape. But Owen, according to his story, didn't lose his head at all. He was there, and he didn't lose his head over this. He immediately grabbed his shotgun and went out and shot the aerial down, before he did anything else [laughs].

Owen was a great hunter. And you know, most of the old timers like Owen and others around the county, kind of believed the animals were there for them. And even after Fish and Game—he was active in Fish and Game by the way; he'd always make trips to their meetings and everything. But Owen didn't think, and others didn't think much of poaching you know—out of season—for the natives. If it was outsiders, that's somethin' else. But anyway, he went down to Pahrnagat Lake, after it had been designated, I guess, a hunters' club for a duck hunting club. And he was poaching, had his truck alongside the lake, and I guess he was alone. I didn't hear that anybody was with him. But he'd gotten some duck, I guess, already. And he saw a couple of fellows walkin' down the shore of the lake toward him. And the natural inclination of anybody would be, well jump in the truck and beat it before they got there, because they might ask you for your card or whatever you have. Maybe it's a badge you wear, I don't know. But anyway, before they got up to Owen, why he was the first one to speak, and he walked up toward them and he says, "You fellas got your tags with ya?"—or your license, whatever it took. "Oh, yes." And they showed him and said, "Gosh, we're glad somebody's lookin' after this. We've heard there's been poachin' goin' on." [Laughs.] Well, that was Owen. Now you can start to imagine what kind of a mind he had, you know. He always had the right answer.

Well Owen had been (years before when Ed Snyder was just getting things going over at the Number One mine, you know) — Owen had been Snyder's master mechanic. And at that time a master mechanic was *the mechanic*, the mechanic of the crew, you know. But he was, with his imagination and everything, he could haywire things together and make almost anything run. So, as the company grew up, and even after I went back with Combined, he was still the master mechanic. This was along about, oh '45 or '46, (of course I'm gettin' out of the dates now, but we're talkin' about Owen Walker, see), when the mechanical crew had to be much bigger—the perlite plant had gotten goin' and the mill there had been built and was going and the mine crew was bigger and there was a lot goin' on—there had to be a good-size crew. Clem Walker, younger brother of Owen, was prominent in the mechanical department, so he was given the job of being master mechanic, and Owen was given his truck to go out and prospect [gestures] you know. And the reason for this was, makin' out all these paper reports and kind of drudgery that you had to do being a supervisor didn't suit him at all. If there was a special problem, he'd be there with a wrench doin' the job, and his crew would be watchin' him [laughs].

He hated like hell to make out reports. He didn't like that idea at all. And he didn't make out adequate reports. And it'd get next to him every once in awhile, and bother him so much that he'd go on a bender.

Well, he was a favored person, of course with Ed Snyder, and with everybody else for that matter. So instead of doing anything else with him, we just did what Owen liked to do, which was let him go out, and take a company pickup, and go prospecting. And he had a burro and a horse, and he had the horse trained and the burro trained to jump into the

back of his pickup, you know, to get up into the pickup. And I have some good pictures of Owen and his burro in his pickup. There was a special unit set up for Owen where he had ten percent of anything he'd find that the company wanted to develop, see. And so for years that was his occupation. And when things finally went down where the company wasn't operating at Pioche any more, why Owen still went on prospecting, but under a plan where the Millbank interests, who had a big interest in Combined Metals, furnished money for prospecting; and Larry Requa, the son of Mark Requa that was a partner of Mr. [Herbert C.] Hoover— Larry Requa used Owen in doing prospect work for the Millbanks for several years.

Well so much for Owen. I think the stories about Owen are about as good as I can think of for the kind of people and everything. And of course, there's just lots of stories that wouldn't fit in print at all [laughs], were floatin' around, you know, among the men.

One story, I guess this would apply to the '30s and the '40s, anyplace you want to put it, so I'll just repeat it now. There was one of these roughneck miners in the Caselton mine that, you know, they'd carry their lunch underground and then sit around talkin'. And the young engineers, when we had several of 'em, measuring up stopes and everything there, sometimes they'd wind up eating their lunch with some of the miners in a particular stope, you see. And I'll never forget when one of these young engineers came out, and when he'd think about what happened at noon he'd laugh. And the story goes that this man—we'll call him "Tom," 'cause that was his first name. I won't give you the rest—was sittin' there tellin' about this close friend he had. And his friend was leaving or something, and he was sure sorry to see him leave. And he was talkin' with, you know, pretty crude language. But he

says, "You know that fella," he says, "he was my best friend. He was a good friend. You know how good he was? You know whenever we felt like it, he'd sleep with my wife, and I'd sleep with his'n." [Laughs] This young engineer comes out, he said, "My God!" He says, "How much of that goes on around here?" That's how good a friend he was. Oh, "He was just like a brother," he says, "just like a brother." [Laughs] Oh me.

Charlie Thompson, that had the grocery store and general merchandise store in Pioche on one side of the street, and the Christians, with the general merchandise store on the other side of the street, were the two—. I think mining supplies like powder, rope, and some of these things that you'd use around the mine, was more often handled by the store that was run by the Christians. And Charlie Thompson was a little heavier on the grocery end and, things of that kind. Although, I think you could get groceries on either side, and mining supplies either side.

But Charlie Thompson we'll speak about first. He was an old timer. And he'd been there when they had a fire that really—I don't know what date the fire was—but it was a bad fire. And it had been rough on him, and I guess destroyed the store he had or something. And so he got very, very enthusiastic about having a fire department; and promoted the red—I guess it was a Dodge truck at that time, and made great business out of keeping the fire department active, and volunteer firemen always ready, and having a good signal, ready, you know, for first indication of a fire anywhere in town. And after that, there was a fire after Charlie was gone, but I don't recall anything like the early fires that Pioche had. And I guess Charlie was probably responsible for that fire protection being as good as it was.

And in connection with that, it had to be—you had to have water. And Charlie was

always concerned about the water mains, because the water came from over in the Highland range; and the pipe had been put in by the Army Engineers way, way back there somewhere in the early days of Pioche. And I think the first pipe was probably one of these wood stove, you know, pipes. And later on, it was made out of, I think, riveted steel. And then later, other sections, you know, had to be replaced once in awhile. And it came up over the hill to a tank on the hill above Pioche. And from there it was distributed down through town. Well, due to this water coming out of limestone up at the springs (Highland Spring, and Floral Spring, and these springs all more or less in the same general area out there) so, water was very hard. I mean it had pretty much the maximum of lime in it. And of course, that would precipitate out in the pipe, and the pipes would get corroded—or not corroded, I'd call it plugged—by the buildup of this lime inside of the pipe. Of course, a change in temperature, when you've got lime dissolved in water at one temperature, say a warmer temperature, and then it gets cold, why, that causes precipitation. In other words, you could dissolve more in water at a high temperature than you do a low temperature. So that explains this buildup. But anyway, the buildup was bad, and sometimes Charlie would be watchin' that, and they'd cut pieces of pipe, a four-inch pipe, but it wouldn't have over an inch and a half of open area left in the middle of it. I remember that was one of the problems he used to talk a lot about in regard to reduced water flow and pressure for fire protection.

Well, talkin' about Charlie and his personal characteristic, he was a very fast talker. He was energetic, just a little guy, lightweight, and very community spirited. And he used to come over to the house and visit with the folks quite a bit. He usually drove a pickup.

Of course, his early pickup was a Ford pickup, you know, in the early days. Roy Orr had the first automobile agency in Pioche (and one of the first in the state of Nevada, I understand). And the first two Fords that Roy Orr sold, after he got the Ford agency, was one to Charlie Thompson, and one to my father, when my father happened to be at Geyser ranch in a short interlude, after being in Old Mexico at a silver mine. And Charlie, when he'd drive his pickup—of course later on he had other pickups—he'd go and get in his, whether it was on Main Street or where it was—he'd get in his pickup, and he'd get the motor going, and get the motor going real good, and then he'd let the clutch peddle out [laughs]. And the back wheels spin [two-handed spinning gesture], and pretty soon the car'd get goin' you know [laughs]. He never got out of that habit. And so you always knew, if you saw that car going somewhere, and gettin' started up, you could always tell Charlie, because that's the way it got goin'.

That's sort of, I think that sort of shows you what kind of a fellow he was. He was just that way with everything you know. Dive right into everything. And a pretty good guy.

He had a son, Charles Thompson, Jr., who later became a graduate from the School of Mines up here, and also a land surveyor, and did water well work around Lincoln County a little bit. Oh, his son, by the way (since we're on that subject), I think when things went to pot in Pioche after his father had died, and the mines were down, closed down later on, why, he sold out their theater, and Charles, Jr. finally wound up going—got married—finally wound up going to Alaska, and became *the* highway engineer, or else in charge of the highway engineers in Alaska. I don't know just where he is right now. I haven't heard from him in some time. He graduated from the school up here. It would've been a few years

after my time, probably '35 or '36. It'd be in the list. And, I followed him up later on in '62 to '64, where he'd done some of the water work, and I had to go on with it. So I saw some of his work in that area.

Oh, I was gonna tell you that Thompson, Sr., beside having a store, had the theater—the Gem Theater. And he was pretty proud of this, you know he had established the first theater, I guess, first “electric movies,” they were called *electric* movies, were very important, they were electric in Pioche in what was called the Thompson Opera House, and the Gem Theater, see.

This was a wood frame building, two stories high; and the bottom story, real high ceiling, so the second floor was up pretty high, and that was the theater. And then he built this Gem Theater, more substantially, right alongside of the original Thompson Theater; converted this to a dance hall—the upstairs of this original theater to a dance hall. And well it seems to me I'm a little wrong, 'cause this must have been a dance hall and theater, where they just moved the seats out, because I remember you go and dance; a crowd of people would be in there, and the whole hall would get to swaying, you know [laughs], because it was just a frame building and not too substantial. And the floor would kind of move up and down a little bit as you danced. But it made nice dancing [laughs]. Well anyway, the Gem Theater then that was built right alongside of it, I think it tended to support this older one better after that. And that theater was there and being run as long as Charlie Thompson, Sr. lived. And when his boy took it over, why, it wasn't doing very well after that, when the mines started to close the population started to drop off after mid-'50s.

Now moving from there to Roy Orr and what he was like. He was a great one to tell—well, to pull people's leg, tell stories, to talk—



just a good conversationalist. And he'd always, if you were with him maybe like on a trip to Vegas for somethin' or other, and you'd go into a restaurant, why, he was always ready to kid the waitresses and have some fun with them, some way or other, you know. Roy, when you'd meet him on the street or at his Ford agency in Pioche, always had a cigar in his mouth, it was never lit, and he'd chew it down to where it was almost nothing left. The story that I tell on him frequently is that a visitor to a town came through that had heard about Pioche and was very curious about the old-timers, and knew that Roy was one of 'em. And when he found Roy, and got talkin' to him, he said, "Well," he says, "I'm sure glad to meet you Mr. Orr." He says, "You and Pioche are almost synonymous in people's minds any more. Have you lived here all your life?"

Roy spit on the ground, he said, "Well, not yet." That was his way of thinkin', you know. It was always quick. He'd come out with a surprising thing. It was not—I mean he didn't have a line of jokes, and that kind of thing, but his wit was, you might say, original wit. And I always enjoyed him very much.

While we're talkin' about Roy, we should mention a little bit that I've heard about his early experiences. Ed Snyder told about hiring Roy with his car for a trip. (This was not a Ford agency automobile. It may have been before the Ford agency days or somethin'. It may have been that Roy was in the automobile repair business, or rental business, or something before that. I don't know.) But Ed Snyder told a story of hiring Orr to take him out to, I guess it was to the Groom mine or somewhere near the Groom mine. I think there was another property a little further out than the Groom mine, way out in the desert country. And this was not a Ford automobile. It was some other kind of an automobile, that had a weakness of

breaking axles. And anyway, they got out there, and they ran into trouble not too far from Pahrnagat Valley, and walked somewhere, and got some help, and got the thing towed in to some ranch (possibly at Hiko) where Roy could work on it, and he had to rebuild an axle or somethin' like that, out of nothin'—you know, out of some pieces of farm equipment or something. And I think that happened on the way out. And Snyder was very reluctant to go on, but Roy says, "Oh, it's all right. We'll make it all right." They were way out in the country. They made it. And Snyder had great respect for [laughs] Roy's—well, his nerve and his ability as well. He could do just about anything [laughs], you know.

Well, off of Roy then, Sam Whitney was a character I got to know in Pioche. He was running or was in charge of the Amalgamated Pioche properties. The Amalgamated Pioche Mining Company has records that would show this was a very large company from the standpoint of stock distribution. There were lots of stockholders in a large stock issue of this company, I understand. And they had an office back in New York. I had a little experience with them, because Combined Metals, during the time it was producing heavily from the so-called Caselton ore channel, had a lease on Amalgamated property that had quite a bit of good ore in it—that is, sulfite ore in what's known as the CM bed (Combined Metals Bed). And, in fact, I think that the first lease that got Combined Metals started was the Greenwood lease, and I don't know whether Sam Whitney was around in those days. I think there was a man by the name of Van Waggenen, that was connected with it; and I don't know when Sam Whitney came into the thing. But that first lease in the Greenwood, my own father had something

to do with being in with Ed Snyder on it briefly. But then Dad left, because he had other ventures—I've already told you something about that. And down the line somewhere why, Sam Whitney stepped in there as the manager for Amalgamated. And I remember that he was very, very meticulous about handling every little piece, pipe fitting or anything else that the company owned, you know [laughs]. And he was a large fella, a very positive sort of a character. And he had a very nice wife, that was prominent in the Eastern Star, and so on, Mrs. Whitney.

One personal experience that I remember well relating to Sam Whitney that I chuckle over once in awhile, is when we had a—I think it was a Lions dinner. And there was quite a gathering, a regular banquet. And I haven't mentioned Joe Cohen. (Joe Cohen is running the Cohen store down there now.) But Joe Cohen's wife had a habit, early in the game, you know, of wearing pants instead of a dress around town. In those days there weren't too many women that did that. Joe Cohen and his wife were late coming into the hall, and everybody was seated. Sam Whitney was over here in a central location, and others all around. Sam had a very deep voice. And when the door opened, and these two came in, why, Joe Cohen's wife was dressed in a very nice dress, and looked real nice. And of course, their entrance caused a lull in all the conversation. And Sam Whitney said—and everybody could hear it because his voice is so deep—he didn't intend for everybody to hear it—but he said, "You know that's the first time I've seen Sarah Cohen, without her pants on" [laughs]. Or, "Can you imagine seeing Sarah without her pants on?" or something like that. You know. That was quite amusing. And the whole hall just burst out in laughter *including* Joe Cohen and the rest.

Well, Joe Cohen was the son of the Joe Cohen, Sr. that established a shoe store, years earlier. And Joe Cohen, Sr. would have been back to the date in time of the Thompson store, the Christian store, and that date, the 1920s and early '30s. He came and established a shoe store in Pioche, a small shoe store. And later on, they built this up into, you know, clothing store and so forth. And it's still there. Joe Cohen, Sr., died, and the son is running it. And he's been a very public spirited person, and always joins into anything that'll help the town or community. So he's one of the good citizens of Pioche today. Been there a long time. I don't know just how old Joe would be now. He'd probably be somewhere around my age. I don't know.

Then, Owen Walker, we mentioned. Well, Owen Walker should've been an actor. His father, Frank Walker, was an old-timer, a self-made everything: mechanic, surveyor, everything else; and even wound up teaching shop in the high school later on. I remember Frank Walker, at the time the Prince mine was being unwatered in the '20s. Why, Frank Walker was working for my father and Mr. Squires in the shop at the Prince. It had been, the Prince shaft had been sunk using steam boilers and steam pumps, you know. And they had converted the mine plant to using the boilers for running steam-electric turbines that they'd gotten from the Sunnyside coal mine over in Carbon County, Utah. And then they had a Byron-Jackson electric sinker pump in the shaft, to unwater the shaft. They were getting away from this steam pump business. The old company had sunk the shaft, and was having trouble, and lost the water, and went broke about the time that we went to Pioche after the first World War period, when my father had been over in Arizona and elsewhere. (I'm just tryin' to place the date here approximately.) So that when my

father and Mr. Squires took a lease on the Virginia Louise property and were shipping ore in the maybe '21, '22, along there, why, the Prince Company was having their difficulties, and they lost the pumps and they were out of money. They had spent their last money sinkin' the shaft, tryin' to get down to where a drill hole had shown some good silver ore. They got the shaft sunk down deep enough to drive out to the drill hole. But they lost the pumps, were broke. Owen Walker was lookin' after things for 'em. Now this is where Owen comes in. And Owen, when this last thing happened (I might have this story just a little bit twisted, but anyway, it's the story that he told on himself), he was so disappointed, and he'd worked so hard, night and day, keepin' things goin', and keeping the pumps from breakin' down and so forth, that he got so discouraged, that he just disappeared, and went to Caliente, and jumped on a train, and went to Salt Lake or somewhere [laughs], and he was gone. And of course, Owen did enjoy goin' on a bender now and then. And, I think he went to work at some mine—I think it was the—well, it was up in Eureka, Utah or somewhere. And he went to work for a while. I guess he, you know, sent his pay to the family. He had a family by that time. And finally, he came back to Pioche (and during what periods of time, I don't know). But Owen had done almost everything. He leased at the Mascot silver mine in Pioche, he and Chet Cook had been partners. Earlier than the Prince experience, when they lost the pumps and everything, why, Owen and Chet Cook had had their store at Bristol.

Now coming back to Owen's father, though, that was the mechanic at Prince when my father converted over to an electric pump system (Byron-Jackson sinker pump—one that you put on a crosshead and let down, and lift the water, and have to, you know,

add the pipe as you lowered the water and so on). Why, this Byron-Jackson sinker pump, a brand new one, kept burning out bearings. And we had, they had—I was just a school kid of course—but they had a lot of problems with the Byron-Jackson Company sending out their men, or sending different bearings. And obviously there was somethin' the matter with that pump. And it was Frank Walker, Owen's father, that decided that it just wasn't made right. So he took the frame of the pump and put it in a great, big lathe that the old company had had there. It was an old, oldtimer, but it was big enough. And he put that in there, mounted it some way or other so he could test for a lineup in the actual casting. And the casting, where the two main bearings went, held the bearings so they were out of line. And he lined it up by boring out so that the bearings would line up, and shimming where he had to shim. Got the bearings lined up, and from there on they had a good pump [laughs] and unwatered the mine; went out after high grade silver ore that didn't turn out to be there. Well, there was a shipment or so there. That goes into a mining story. I was just telling about Frank Walker, and the kind of a fellow he was.

Well, Frank did a lot of surveying around the county, and I guess he was the first county surveyor, since early days; you know, since back in the '80s. He was well enough acquainted with the art to do the water work around the county and so forth, and do people's water well application and things like that. He didn't care particularly how he printed or anything like that (and his maps showed it), but the information was there. And then later on, due to his natural mechanical ability, why, he was even hired as a teacher, of shop work, down in Panaca in the high school down there. And till he was eighty or so, I think he was doing some of that,

you know, teaching kids. So that's the Walker people. And of course, there were other members of the Walker family. Actually, it was a younger brother of Owen that became the master mechanic when Owen was given the prospecting venture. That was Clem Walker.

Now let's get back to any of the other old timers. I'm tryin' to think of any others that dated back into the old time era, that I knew.

Well, Ed Snyder, himself of course, was, as I say, an assayer for a while at Pioche. He and his brother, George Snyder—George Snyder was a very capable promoter, in that he was very personable. He didn't do wild promoting particularly. He was also practical, an operator kind of a fella that would get in and do the job along with the men, but his father, W. F. Snyder (the father of Ed Snyder and George Snyder), was a well-known mining man up in Salt Lake. And of course, he was the one that got the boys into the mining business. There were four. Let's see. George Snyder, Ed Snyder, Guy Snyder, and Neil Snyder were the four brothers. Of these brothers, George Snyder was sort of the personality man. He could get your money, and tell ya you'll never get it back, and you'd like it. You know, I mean that kind of a fella. He really had the personality. He was, at one time, the head of the Republican party up in the state of Utah. The state chairman, or whatever, in the state of Utah. And when Mr. Hoover was running at one time or another for election, why, coming through Utah, George Snyder got acquainted with Mr. Hoover. And it was through that, that Mr. Hoover got interested in the Pioche situation, and sent Mr. Larry Requa out to have a look.

And at that time, and prior to that time, even up through the time that—well, let's see, about 1943 or somethin' like that—the National Lead Company had had a controlling interest in Combined Metals through a bond

issue, and stock issue—complicated corporate arrangement, anyway. And, Mr. Hoover was very much interested in the story he heard, so he sent Larry Requa down to have a look. And Larry Requa came down at the time the mine was going and all; and a drill hole had intersected a good showing of ore way over on the west end of the Caselton ore channel. And Larry Requa was correct in assuming—like others did, that the ore channel would continue west from blocks of ore then being mined. Obviously, the reasons for drilling the holes was projection of an ore channel, that seemed to have a lineup adjacent to the so-called Greenwood fissure on one end, but the Greenwood fissure seemed to sort of disappear, and the fissuring turned in a different direction for the next ore block; but the ore channel was still lined up in an east-west direction. So on the theory that maybe it would extend that far, they drilled and went through into the footwall side of a big fault, found some ore, and it was good grade. So on the basis of that kind of information, Larry Requa projected a continuous ore body in between. And the Millbanks and the Hoovers bought National Lead out. That would've been, I don't know, maybe around '43 or somewhere in there. Anyway, we already had the Prince mine going, and shipping to the Caselton mill at that time. The Caselton mill had been built, while the National Lead had its interest. And I think that the company owed National Lead—. I think the buy-out took about three million dollars. (I don't know. The figure isn't important.) But, at least the Millbank people—it was a family, a long established, well-to-do family. Mr. Jeremiah Millbank, Sr. was the senior one of the family at the time—had various large interests at different times. But, one of the prominent interests was a—I guess even a controlling stock interest to Southern Railway

or something like that. I mean they were very wealthy people; and they were supporters of Mr. Hoover, very strongly especially for all of the good work he did in humanitarian area, and later on the Boys' Clubs and everything. (I mean, you know, when Mr. Hoover was even president, he didn't take a salary, because he didn't have to have a salary, didn't have to have the money.) And anyway, the Millbanks were great supporters of Mr. Hoover, and friends, and they used to come out and visit, Mr. Millbank and his wife, with Mr. Hoover. And Jeremiah Millbank, Jr., the son, became active later on in the affairs of Combined Metals. So they came into the picture then in early '40s. And, the projection of that ore body turned out to be correct, and it all worked out very well.

Gettin' off the subject that we're on here, but since we're mentioning it, later on the company got in their most serious difficulty when they attempted to go into the manganese business. And maybe we'll say somethin' about that at another time.

Coming back to the old time days in Pioche. I think I can remember only one fire in the time, important fire. You know fires in these old camps were quite a thing; and Pioche had had a couple of them that practically wiped the town out, you know? And I can remember probably the most devastating fire that was had in the period of time I was around there anyway. It happened at a time when I was on my way to California. And from Prince camp we saw the smoke rising up over the mountain between Prince and town. And I drove out over to Zero Pass, and looked down on the town to see this fire. And it burned out, oh, I think Joe Cohen's Leader store, and one of the bars, and—maybe three buildings. It must not've touched the Gem Theater, because the Gem Theater was, I think, made of concrete block

or somethin', just below there. Anyway, these things were rebuilt, but there were some stories in connection with that; and especially in connection with the bar that had a lot of liquor stored in the basement. And there were lots of people in town that were dashin' into this basement while the fire was goin' on, carrying out cases of liquor that got scattered all over town [laughs]. And the story about the police. One of the policemen anyway who was supposed to be there watchin' things, they say, had rushed to get his camera, and get up on the hill to take pictures [laughs]. So there were several, you know, stories of that kind, about the fire. But, we were on our way so you could tell, I mean, from where we were watching, you could tell the fire department was very active, and apparently they were gonna keep it from spreading, and they did. So.

Oh, there was one other fire—speaking of fires. I happened to be away at the time—Prince mine was running, and I was still advising Bristol and getting out to the Bristol mine a good part of my time. This must've been, let's call it, say 1945, somethin' like that. Why, I got a call out at Bristol, that there was a fire in the warehouse and compressor house, which was right adjacent to the Prince shaft. And Prince has big, old, wood headframe—tall, heavy, wood headframe. The hoist had been moved around, and the headframe had been shifted in a different direction to what it had been before in order to line up for a twocompartment hoisting of cars. Previously, the headframe was set the wrong way. But, anyway, the fire broke out, (and nobody knows just how it happened) in the warehouse. And it spread very rapidly on account of the bursting of cans of turpentine, and materials of that kind they had in the warehouse. The fire department was called. I was called out at Bristol, twenty-five miles away, and of course, I rushed in as fast as I



could go. By the time I got there, they had it under control and all. But, there were a few funny incidents.

At that time, Sam Arentz was I believe an engineer, maybe the head engineer—I've forgotten. Probably the head engineer for Combined Metals up at Caselton. (Later on, I went to work for Combined Metals, while I was still serving, doing some of the work at Bristol, and still serving at the Prince.) But, at the time this happened, why, the Caselton crew came down to help. Everybody saw the smoke. And Sam was there. And, if you ever talk to Sam, ask him about the Prince fire, and the fact that he got tangled up with some of the electric wires that fell down, and it made him dance all over the place [laughs]. He was there tryin' to help to help put the fire out. He practically got electrocuted.

But, Doug Jackson was in charge, you know the mine foreman; and there was a crew underground. And this could have been, you know, a disastrous situation, because it could've gotten started into the headframe and the shaft timber. And Doug, immediately went wherever he could, gathering up sheets of iron, and covering the shaft; and spent his time with a couple of men protecting that while the fire was being put out over here. I thought that was pretty good presence of mind. So. Well, those are the only fires that amounted to anything, during my experience down there. Of course, there've been small house fires, or a building burned down in Pioche, I suppose a number of times, but—.

Vern Stever in Pioche, had a store—that is, his wife, Muff Stever, had a store, selling soft goods. And Vern, at the time, was our head assayer over at the Caselton assay office. And he had a crew of helpers. Some of 'em were ladies, that would work in the assay office, where they were running lead and zinc assays, and copper once in a while; and fire assays on

gold and silver and so forth. Well, Vern had trouble with his sewer. He had trouble with his sewer there at the store. And somebody advised him that a way to clear it out—he'd tried the wire, and this and that. The sewer line ran out in front of the store, and into the main sewer going down Main Street. And somebody advised him to use just a little bit of dynamite, just enough to give it a jar [laughs]. And so he decided to try it. And so he—well, you can almost predict the rest of the story. He got advice on how much to use from people, different ones. And finally, it wasn't gonna do any good if you only put so much in; you'd better put four times that much or somethin'. I don't know how much he did put in. But, he managed to get it slid down the sewer to a certain place under the sidewalk somewhere, and lit the fuse, and everybody got a little bit out of the way, expecting just a little jar. And it blew right up through the sidewalk, and smeared all the goods in the showcase [laughs]. And he'd been a miner, a leaser, so forth, and he knew a little bit about these things, but he didn't know just how much to put in the sewer.

During the early days of Combined Metals at Pioche, the company was financed by National Lead Company; and National Lead had done a lot of churn drilling for exploration work back in the Tri-State field. So when it came to trying to find ore—you know, do exploration work by drilling—why, it turned out that a bunch of Keystone rigs, Keystone Number Five rigs, were sent out from the Tri-State, along with some drillers and helpers. And among these people were some of the drillers that stayed on and made their home there, even after the exploration was over. One of these individuals, one of the top drillers was Ira Haven.

Ira Haven probably went to work when he was twelve, or somethin' like that, and he



couldn't write his name, even, when he came there. I think he learned a little bit so he could make out drill reports, you know. Well, he could write some figures, and he usually had a helper that could write anyway. During the period of time he was there, I think he had learned a little bit about reading, you know; but he hadn't had even a grammar school education. And he was probably the best driller of all, that ever hit the camp, because he had just learned it from scratch, see, with the best drillers back there. Well, Ira Haven, after the period of time that a lot of drilling was going on (that included—oh, I guess it went up through into the '30s you see, about well, up to the depression, in that period of time, '28, '29, '30, and all along there, they were doing quite a bit of drilling).

Well later, Ira took on contracting of ore haul and so forth, and had some trucks. But he got to be pretty well known around the community, and decided to run for sheriff. And he thought he was quite a ladies' man. He really thought, you know, that he—. He dressed very—with rather fancy clothes—and was a very fine lookin' fella. He was a good lookin' specimen, you know. And he'd wear a broad-brimmed hat, and go around really lookin' pretty nice. And when he decided to run for sheriff, why, he got himself two pistols on his belt. He had a firearm on each side, and goin' around. He was sure he was gonna win [laughs] sheriff. And he didn't make any bones about saying, that at least the ladies would vote for him, you know [laughs]; and he'd get plenty of votes. Well, when the chips were down, he didn't get all those votes. And, in fact, it didn't look very good. He lost by quite a margin. And the story goes that somebody asked him—he'd shown up in town with both the pistols still on—after the election, why, here he was with these guns he was wearing. And somebody asked him,

since he'd lost running for sheriff, when the purpose in wearing the guns was to show how he'd conduct himself, how come he still had the guns on? "Well," he says, "anybody that gets that few votes, better wear guns." [Laughs] "It seems to me, I haven't got very many friends." [Laughs]

You're after somethin' humorous, and sort of based on an actual experience. Judge Nores had a drugstore during the Prohibition era (and prior to that, I guess) on the main street of Pioche. And during the Prohibition, he served what he called "Pioche Specials." He had—he could get from the doctor a prescription for alcohol, so he managed to get lots of alcohol. Then he'd mix it with soft drinks of one kind or another, but whatever the drink was, he called it "Pioche Specials." Depending on how inebriated a person was gonna buy another "Pioche Special" from him, you know, in a pop bottle, why he'd start cutting down on the amount of alcohol, as they got more inebriated. And it worked, according to him, it worked better both ways; they didn't get sloppy drunk as fast, and he made more money that way [laughs]. He just started cuttin' down the amount of alcohol in a pop bottle, see.

Well, Judge Nores was a very public spirited sort of a fella. And later on, he acquired the newspaper—running of the newspaper. He was the editor, and I think the paper itself was owned by John Janney. And he was, of course, in the middle of things politically because he had the paper, and all the politicians that come around would want to get next to Nores. He ran for election as the justice of the peace, and got elected. And later on, there was a recorder that was doing something, absconding with some money or something like that; or else it was the treasurer. I've forgotten which. But, they called a grand jury. And in the course of the

investigation, the grand jury looked into the justice of the peace office, and through sort of a fluke, they discovered that Judge Nores was pocketing money that he didn't report, you know, the fines. And this was mainly due to a check that was made out to pay a fine, and didn't appear in records. So, they told Judge Nores that he wouldn't be prosecuted if he would just retire from office, and let it go at that 'cause this wasn't a big amount of money or anything. Of course, his argument was that it was the only decent pay he got out of the office, was once in a while to take enough to compensate him for the effort and so forth [laughs]. And so they let him off. He was too popular, you know, in a way, to take to trial. And they didn't want to do that, and told him if he'd just retire from the office, why they'd let him off. So he did. But then he went around town, and he had a pet phrase, the "duttie bastards." "The duttie bastards, look what the duttie bastards did to me." "But I'll fix 'em," he says, "I'll run for election," and he said, "I'll get elected again." He was a southerner, and had kind of southern accent. And he said, "I'll get elected again." Well, he did. He ran for election, got elected again. And this has always been a sort of an illustration to me of what the public is really like, you know. Here's a man who's definitely proven to be taking money that didn't belong to him. And they elected him again. I think it was after that he ran for—and I'm not sure about this, yeah, I think it was—it was after that that he ran for state senate. And he was a state senator from Lincoln County for a period of time. And so you see the public isn't as inflexible. When they're close to the person. They're not near as firm in their convictions as if it's somebody, say, the president of the United States or somebody does somethin' that is on TV, why, the public reaction is great, you know. They can swing the public any old way they want

'em, when they get 'em on TV [laughs]. This is just a little personal observation.

Anyway, during the course of this experience with Judge Nores, why, my brother Dave being a pretty good two-handed drinker, and he'd be over town with the boys every once in a while. And the judge would walk in. Of course, he was always ready to have a drink, and he bought drinks, too. It was kind of fun to play a joke on Nores, because Nores was kind of, he was a different person than the rest of 'em. He had a different set of morals, that he claimed came from his southern plantation background. I don't know where it would've been, but it was a funny background anyway. And he didn't have the hesitancy about what you or I or most people would call a moral approach to things. He just didn't have the wee small voice. It's hard to explain, but he just didn't—. There wasn't a book of morals for him, see. And he'd readily admit it. And he'd brag about how he handled this liquor business you know; and make better money for himself, and he'd be protecting the guy by not havin' him drink as much—and he paid the same, you know. Well, anyway, Nores was always a butt of a joke, one way or another. And he was rather thickheaded, so it didn't soak in, you know. And, the story goes that one time he came into the bar, and Dave, my brother, had decided, before he got there (for some reason or other, they knew he was gonna come in). And they worked up a petition. Got all the fellas at the bar to sign it, that stated, "We citizens of Lincoln County herewith petition for the resignation of Judge Nores as being not qualified to hold the office of justice of the peace, and proof of the fact—" is this and that. And made it kind of legal language, you know, along that theme. So they passed it over to him, and he glanced at it, and saw all these names, and he signed it. [Laughs] And then they bugged him about

it a little bit. Of course, with his mentality, he took it very seriously. And it was, oh, it was just terrible. And he wanted to buy them all drinks, and have em tear it up [laughs].

Another character that I knew quite well, that was a good joke player around the community, was Art Bernard. Art Bernard, as a young fella, always had fun playin' jokes. Well, one of the jokes that was played by Art and his friends, was played on Judge Nores. Judge Nores visualized himself as a great ladies' man. And there were a couple of gals that came in town—he'd made some kind of remark about gettin' acquainted with them. The story was goin' around that, well, Art and others created the story that these gals were approachable and one of these gals that Nores particularly liked the looks of, and liked to get acquainted—had her eye on him, and she'd like to meet him, you know. And, the boys had set this up so that he'd have a chance to meet her out by the golf course—which is quite a ways out; nothing but a hardpan golf course, and no grass or anything. And it was out near the big ditch that comes down Lake Valley, Patterson Wash, the drainage ditch, which is a U-shaped ditch, and drops off about ten feet from the bank down to the bottom.

Well, they set this up so that Nores went out at night time, and was supposed to meet this gal that had a very jealous father. He couldn't get acquainted with her in the open. It'd have to be a secret. So, Nores went out to meet this gal, and when he got there, well the boys were ready for him. And you know, he went out, and he saw a figure up here and hollered, you know, "Hello," or something. (You'd have to get the real story from Art, because he can tell it right.) Anyway, they fired some shots as though this was the father, you know [laughs], and Nores took

off running through the brush, and ran down below the golf course, and landed in the big ditch and broke his hip. [Laughs] Now, the straight of that story, if you want to get it, you ought to get it from Art, himself. Of course, Art was a good miner, and a good supervisor. He shifted for me out at Bristol for a while. And then later, you know, he got to be deputy mine inspector for a time, then ran the State pen very handily. Did a good job. But as a young fella, he was a prankster.

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## TECOPA: THE GLORY HOLE OR PAY DIRT

I guess it must have been fall of '36, or spring of '37, with an arrangement consented to by the company officers, Jack Buehler and I were encouraged (because they weren't payin' any high salaries or anything), but we were encouraged to go and look for somethin' on our own, if we wanted to. So we set up a little fund that we'd put about fifteen dollars a month into, or somethin' like that. And we'd hear of some property that oughta be looked at. So when Jack was not too busy with his powerline work or somethin', and could stay in camp a few days, why I'd take my car, or use Jack's car, and go look at the property. And usually it'd come to us through a promoter or somebody's story. I guess during the period of late, well, from there till '40, 1939 or '40, I think at one time I figured I looked at about forty properties. I was always the one that'd go look. And one time I'd take my Ford V-8 and the next time I'd take Jack Buehler's Chevrolet coupe. We'd alternate that you know. This fund would pay for the gas and whatever the cost was.

Well in the process, I looked at a property in 1937, down in Death Valley area—the old Tecopa properties. And of course my objective was to look for a property that was, you might say a poor man's mine—something that could be operated without a big capital investment, because we didn't have any money. And this property appealed to me. It was brought to my attention by Clinton Ray and Sam Greenwood, a couple of mine promoters. And I went and looked at it in 1937. It was several mines there in a group known as the Tecopa mines. It went Noonday and the Gunsight, The War Eagle, Grant. I remember those names. And I met the man who had it, Dr. [L. D.] Godshall, who had been manager of the Haciempa smelter over near Prescott, Arizona at one time, and had smelted ore from the old Tecopa mines. The property had a branch railroad eleven miles long, from the Tonopah and Tidewater line. And this property apparently had shipped up to that time- - I think the report that I got from Doc Godshall indicated there'd been about

three million dollars of production from the various Tecopa mines. Well, Godshall wanted to make a deal all right at that time. I don't know whether he had picked up the property himself at that time or not. I think he got it as a tax sale or somethin' you know; and it had long since, or several years before, gotten into some kind of trouble legally or otherwise, and he managed to get ahold of it. And there was a chance to sell the rail from this eleven mile railroad to the Japanese. And so his terms were, if you were gonna come in and do anything with the property, why you had to at least put up the money for that rail, if you wanted to save the railroad, and so on. And at that time, it looked like that was the thing to do. And so I wrote up a little report on it, and I submitted it to Mr. [Ed] Snyder, and his brother George Snyder, and the Snyder family, who were at that time heavy stock owners in Bristol, would then be the ones to take it from there and try to find the money to do something with the understanding that I would participate and Jack Buehler would, for having brought somethin' to light, see.

Well, the reaction was they'd better check up on it, and have some others look at it. So Ken Cochran (who was then working for Combined Metals. See in the meantime, Combined Metals had gotten activated again, and Ken Cochran was the engineer), and L. G. Thomas, who was then the superintendent for the Caselton-Combined Metals operation—Ken Cochran and L. G. Thomas went down to check up on this property. They came back with the report that in their view, why the property had merit as an oxidized zinc producer, because in the bottoms of the old stopes, secondary zinc had precipitated out. I didn't regard that as a very attractive possibility because I was lookin' for a poor man's mine. You know to do somethin' with

this oxidized zinc meant somethin' beyond my capability and remains uneconomic to this day.

Well, in the meantime, I don't know whether it happened right then, but/shortly after that, the railroad was torn out—that is the eleven miles of rail into Tecopa was taken up and sold to the Japanese. And Mr. Snyder wanted to know, after he got their report, why he wanted to know if Jack Buehler and I were interested in going ahead and tryin' to do somethin' about this. And I said, "Well, on the basis of that report, no." Because my opinion was that, the only thing to do that I could be interested in, would be to find some more of the high grade like they'd shipped before. They'd shipped quite a bit of real good lead ore with good gold and silver values in it. And I figured that, although I hadn't done enough on the ground or studied enough to know where I would do any particular work at that time in 1937—examination—why I figured a property with as much spread as these different shafts and everything, surely had some places to find some more of this ore like they'd shipped before. So I said no, and Jack went along with me. And we continued to look at a few more properties.

But in 1938, in June, 1938, I married Jack Buehler's wife's sister, Fern Jensen. Her father was a mining man, and had been instrumental in helping Combined Metals get off the ground in its inception much earlier. And, in fact, I think he had put a little bit of money into the initial moves of getting Combined Metals going. I don't know too much about that story, but he had also earlier, been a manager of mining enterprises for the Knight Investment Company. And Mr. Knight was a well-known mining figure in the Salt Lake City area. "Uncle Jesse" Knight they called him [laughs]. I think he was a devout

Mormon. Certainly, J. C. Jensen was, and my wife is certainly a devout Mormon. And Jack Buehler, and Freda, and all of 'em.

So I got married to Fern in June '38. And we fixed up a cabin while we were planning to get married. I did some work on fixing up one of the old houses at Bristol camp up on the hill. And she did some shopping in Salt Lake for folderol [laughs], things you need [laughs]. And I made a trip up there, and we shopped for furniture, that was to be shipped down. And Jack Buehler and Freda Buehler, his wife, had two girls that were old enough at that time to be interested, and they came up and painted the house for us while we were on our honeymoon [laughs]. And when we get back, why everything was set up for us. That was awfully nice, we had a party there for the whole camp. And Fern put on a big—I don't know how she got that many people in the house—but she put on a party there, but first the camp had a party for us down in the valley at Bristol Well. (Bristol Wells is near three old charcoal ovens; we used to call them coke ovens, they're charcoal ovens. And there used to be a smelter down there in the bottom of the valley back in the '80s.) But we'd go down there for ball games and parties.

That part of it is worth doing a little relating about—how you'd entertain yourself in that time. You didn't go spending big money, but you'd get maybe a lot of hot dogs, and have a whole tubful of hot dogs on the fire, you know. And I guess you'd boil 'em. I don't know. You'd have a lot of goop to put on 'em and some buns. And everybody'd eat all they wanted, and you'd have beer. And maybe play a ball game while the gals watched, and talked to each other [laughs], and had a lot of fun you know.

And you were hobnobbin'—there wasn't any class distinction. In fact, I grew to

appreciate the miners, recognizing the trail they'd come over, the education they had and everything. Among those fellas there, a Montenegrin, a great big man, tremendous man with whiskers that rolled up, you know (gesture stroking mustache), and he'd keep 'em [laughs] trimmed. That is a mustache, big mustache, not any more beard, but just a big mustache. Mike Wich was his name. A tremendous fella. He couldn't read or write. But he ran a lease. And he knew how to figure, and he'd always have three or four men with him running his lease. And these leasees would operate in the old stopes where the company operations didn't pay any more.

And then we'd set up these split-check leasing units where the company would furnish, you know, the air, and the drills, and do the blacksmithing, and do the assaying, and do all those things. And the men would get half of the net smelter returns, you see. Or depending on the place, sometimes you varied that a little bit, depending on how good or how bad it was, but generally that was the way. And these Italians were awfully good leasers: Tom Grasse, John Piontoni, oh, I could think of several Italian names, you know Belingeri, Dominic Belingeri was our blacksmith (he was Italian, of course) and a damn good one, good mechanic, good welder. His son (same name) is Lincoln County Recorder.

But Mike Wich, coming back to him, he was the strong, powerful Montenegrin. He couldn't read or write, but he could sure run a lease. And everybody liked him. He was always helpin' somebody out. He never banked a lot of money. He always made excellent money leasing, but when he made it, he'd split it up, take his share and he gave the same share to everybody else (although maybe he's doin' half the work you know), but he gave the same share to everybody else. And



then what he'd do with his money, once he got his part of it, he starts helpin' other people out that needed help. [Laughs] That kind of a fella, and I grew to have a great regard particularly for this man. He was a real human being. And the thing, the sad thing was that he drank liquor almost like anybody would drink milk. Of course he was big framed, big fella, and I guess he could stand quite a bit of it. And he had a gallon jug. Oh, he never bought it by the quart or anything; he'd buy it by the gallon. And he had the gallon jug under his bunk. (You know, we had a bunkhouse. Most of the workers were there as single men. They might be married with a family over in southern Utah or somewhere, you know. That is, outside of these Italians. The Italians, if they had a family in the U.S., their family would be there you know. But there were a number of them that were single. We had two bunkhouses at that time. One of them burned down later.) But Mike would have his jug of liquor under his bed, and when he came out of the mine to clean up, he'd go and get a shower, and clean up, and take a whole glass of liquor to freshen up with [laughs].

Then Mike would have more heavy drinks after dinner. The boarding house was running, and the cook was Madge Buehler, wife of Jack Buehler's cousin, Erwin. By the way, he, Erwin and Madge were with us out at the Comet mine too, before my Bristol days. At Bristol, Erwin Buehler was one of my shift bosses on the opposite shift usually, from the shift I took care of before we graduated to having two shift bosses. And he was a great big powerful man. His wife, Madge, was a real good cook. She was our cook out at the Comet mine when everything was dead too. That Comet mine was the only mine goin' in the county. Well, anyway, back to the Bristol boarding house. Mike Wich would usually come into the boarding house after dinner, and there'd

be some of us gathered around, and we'd play some pinochle. And this, he was real good at. He understood that plenty well. You know, he's usually the winner. And again he'd have a water glass of liquor by his place, see.

Well eventually I guess, this kinda caught up with Mike and he got ulcers. And he went to the hospital, I believe, in Cedar City [Utah], the first time. Erwin Buehler took him over, and he was told that he couldn't have any more liquor, that he had to quit. From that day on he never took another drink. He just quit, just like that. Very strong [laughs] power, willpower, whatever it took. Well he got pretty good again, and got to workin'. And then he got sick. And this time, Erwin took him to Ely into the hospital there. And I guess it was too late. Anyway he died in the hospital of a bursted appendix. And that was kinda sad.

Oh, he had a New Year's that was different than the other New Year's Day. I don't know what date of the year it was. But he'd always get a pig and roast it on the sidehill, out in the open, and he'd really load it up with garlic. If you could stand the garlic, it was delicious [laughs]. He'd turn it, you know, on a stick over a fire; and had anybody that wanted to eat any, why, they could have it. I wasn't that much in love with the amount of garlic he put in it, but anyway, that was his New Year's.

Well, during this period, I guess that some of these things may be, some of these experiences, might be of interest. It was in the year that I got married, that I went down to see the folks with my wife, with Fern. And on the way by Baker, California, I told Fern I was gonna make a deal some day on that mine up north of there [laughs] at Tecopa; and we were gonna make some money out of that some day. I don't know whether I was lookin' at a crystal ball or not, but that's the way it eventually turned out. And it was in 1939, that I went back to have another look. I'd been

approached again by Ray and Greenwood on another mine, and been to look at it, a property that had some potential all right, but I told 'em that the one that I'd like the best was this Tecopa thing, and I thought that if the railroad branch had been torn out that wouldn't stop the thing from going, you know, if you get your nose into some high grade ore, and they were asked to go back and check up on this. So they went to see Dr. Godshall. By this time Dr. Godshall had undertaken to do some development work, and gotten a party by the name of Mrs. Beldon interested, and who put up a little bit of money, and had sunk a shaft on what was known as the Hitler claim, on a little showing. And he got down, I've forgotten what the depth was (probably 130 feet or something like that) and opened up a little bit of ore about two feet wide; and drifted along for, maybe a hundred feet with the ore swelling and pinching a little bit; and there'd been a little fault offset and the drift ended. Well anyway, they reported, after seeing Dr. Godshall, that he had been doing this work. The rail had been sold all right, but he was interested in makin' a deal. He wanted twenty-five thousand dollars down, and wanted a hundred and fifty thousand for the property or somethin' like that.

Well, the fact that he had opened somethin' up, according to the story, why I went down and made an examination, sampled up what I could see, and went back and did some calculations on what the probable ore would bring represented by the showing that had been opened up. I figured about nine hundred tons could probably be mined there, if it was mined selectively and carefully. And I knew about what I could get from the smelter for it, under the contracts I'd been familiar with. So Jack Buehler and I decided to go ahead and see what we could do about it. Well, I went to the bank in Pioche and borrowed two hundred

and fifty dollars, and Jack Buehler put up two hundred and fifty. And I went down to see the Ray and Greenwood people. Their families thought they were crazy, you know. And they didn't have any money themselves.

Oh, I should mention a little bit about the examination. Fern and I went down then. And she set up to do a little cooking with a little gas stove; and Ray and Greenwood and I would wander around, while I was doin' a little mappin' and figuring and sampling. And I looked at all the properties then, and got some ideas on what I would do, but mainly, of course, this Hitler shaft, so-called. And Ray always had his liquor bottle around, but Greenwood was a very straight laced sort of a fella. Both of 'em were Mormons but Ray didn't pay any attention to the "good book" [laughs]. And they arrived there in an old Ford with their groceries, but, you know, the groceries that they had consisted primarily of boxes of corn flakes and canned milk [laughs], and liquor, for Ray. Well, he's a very—both of 'em were pleasant people, and we enjoyed them. And Fern felt soft-hearted about the corn flakes diet, and wound up cookin' for the bunch, you know, in the old superintendent's house. And on the way down, we'd found a turtle, desert turtle, and we had that tethered by the cabin, and she fed it lettuce. Of course, we shopped at the grocery store in town, and we ate pretty well. Ray was always singing a song, "Here Comes the Man with the Mandolin," you know, when he'd come in, he'd be whistling it or singin' it. So this turned out to be one of our theme songs, we like to this day, because of the way this venture turned out.

And so, coming back then to the report, and finally going down and working with Dr. Godshall, why, I realized that there wasn't any chance, you know, of just raising twenty-five thousand dollars, and the only

way I knew was to persuade Dr. Godshall that we meant business and would really try to do somethin'—and partly on the advice of Ray and Greenwood, saying you can't go to a fella like that and expect to get a deal out of him unless you pay him somethin' you know. And so that's why a thousand dollars option money was made ready. In order to get the five hundred dollars from Ray and Greenwood, or two hundred and fifty dollars each from them, why I had to go to their folks, you know, their daughter and son, whoever they were, and talk to them about it. And I guess I persuaded them to give each one of them two hundred fifty dollars. So we had a thousand.

I had a thousand dollars with me when I went to talk to [laughs] Dr. Godshall at his big home down in, I think it was over toward Hollywood there somewhere, and I went alone. Ray and Greenwood said, "No, we shouldn't go. We don't want to be present." They may have had some other reason. I think they had somebody else back of 'em on the first examination, and this time they didn't want to be out in front. I don't know. Anyway, I went there. Sat down and talked with Dr. Godshall, and I opened up my report and let him read it; and said, "Now, I haven't any basis to go on here except to let you know what I *can* do. Can't come up with twenty-five thousand when it's totally a pig in a poke, but I do figure there's this nine hundred tons, and there's about twelve thousand dollars net in it, net profit."

"Well," he says, "that's not too bad." He says, "In the first place," (after reading my report) he says, "young fellow," he says, "I feel after reading your report, if I were twenty years younger," he says, "you wouldn't have to go any further; we'd just go ahead and do this." But he says, "Under the circumstances, with Mrs. Beldon being involved and everything," he says, "I think the right answer here is, you

just dig up that twelve thousand dollars before you start doing any producing, as the down payment on this hundred and fifty thousand dollar purchase price, and I think we can talk business." [Laughs] And so we drew up an agreement then. And he got the thousand dollars. That was a thousand dollars of the twelve. So we had eleven thousand to find.

I didn't know where we were gonna get it. But I went to Salt Lake then, and I arranged for some more time of f, and went to Salt Lake. And I talked to the Snyders. And Ed Snyder was gonna go down and have a look. But anyway, so that I wasn't losin' any time, I went to the different smelters about treating the ore. And I found out that International didn't want the ore, because of its dolomite content. (Later on they did treat it.) And U. S. Smelting, Refining and Mining Company were also afraid of the dolomite that was in the ore, because they'd had some experience with it, and with the particular ore they were treating, at that time, it didn't work good. So I went over to AS and R [American Smelting and Refining].

At that time there were three lead smelters in Salt Lake valley. And this would require a lead smelter. Direct shipping—lead ore with the gold and silver in it see. Low insoluble. A good kind of smelting ore, providing that you didn't have something in it that they didn't like. Well, AS and R said, "We'll have no trouble with that. We'd love it." And in fact, I got to the point where they said, "Lookin' at the report, if it's like you say it is, if we can check you out and it's just like you say, we'll finance it for you."

And right then that evening at the hotel, I got a wire or a telephone call (I've forgotten which) from Ray and Greenwood (from Ray, I think it was) telling me that he had contacted a man by the name of Buford Davis, and he was the operator for United Verde Extension

people, from over in Arizona. After they'd closed down the United Verde Extension property—a big copper mine—some of the former officials led by George Kingdon had gone into a gold mine up in Idaho, I believe it is, called the Golden Anchor. And they had mined this out—figured that it was terminated, type of ore changed or something, and they closed that down.

So they were looking for something else, and Buford Davis was ready to meet me down at the property to check my report. Of course, I'd given the promoters a copy of my report. Normally, I wouldn't do that any more, but anyway, I did. And they had shown it, and so I scooted back down without going ahead with AS and R. I went back down and met with Buford Davis. And he took a couple of samples where I'd taken 'em. He checked those out and was satisfied. Right away, why we had another meeting down there, where Jack Buehler and I went down and met with the Arizona crowd: Mr. George Kingdon, Mr. A. B. Peach, and Buford Davis were all there. And Jack Buehler and I were there. Well, general terms were arranged right then, Johnny on the spot. They were to put up twenty-five thousand dollars. They were not to get the twenty-five thousand back. It was kind of a funny arrangement we had there. But anyway, they were sold on it. This wound up with it making a deal. There were some complications in it and some delays. No use repeating, but it got put together.

Well, this operation then, got off the ground, and then in 1940 it got going. And by the Christmas of 1941 I think it was, Fern and I got our first dividend check—well not really our first dividend check. The first dividend check we ever got was from the Haciempa Hotel in Prescott, where my father had had a little interest; and that'd been distributed around to the different members of the family.

We got a dividend check of ten cents. Our second dividend check, from this mine, was five thousand dollars. And those of us that put the thing together—the two promoters, and Jack Buehler and myself—each came out with a ten percent interest, stock interest, in Shoshone Mines, Inc., which I organized under my own name before this deal, see. My brother, Jack, my younger brother, by that time was out of school and had passed his bar examination, and was out at Pioche practicing law. And he had put the company, you know, put the company legal papers together for us. And so, as I recall, he got some stock. And I had had George [C.] Heikes go down and look at the property; George Heikes was a geologist with National Lead I'd gotten acquainted with, and he's a good friend of mine to this day. And George had gone down, because we thought maybe we'd have to raise public money or somethin' to do this job, and we needed an independent report. Well, he'd gone down to look at it. But before we ever needed any report from him, why this other deal materialized. And so we were off the ground. And so it worked out pretty good. The only thing is, we went into the war years, and the War Production Board had set up a premium price plan for the production of base metals. And in this plan, they had the basic principle involved that the precious metals were not what they were after, and they were not inclined to pay any escalation of costs on the basis of your precious metals. But if you needed a premium on your ore, why it would be based on either the lead or the zinc or the copper base metal content, but no premium for the precious metal in the ore.

Well as it turned out, we, of course, went into the war years with this operation and costs escalated terrifically, as you can well imagine, particularly with wages, and all the good men went into the services. So that

didn't work out very good. But nevertheless, to make a long story short, why, Fern and I came out well in the venture, and eventually the mine got sold to Anaconda. And between our dividends and our capital gain in the business, why, we made a nice stake out of it that later on I was able to use to multiply some more.

I'm unusual in the mining business, I think. One of few who get an opportunity to put somethin' together for themselves. I'm unusual in that I have never gone broke. You know you have to be an extreme optimist to do these things in the first place; and then you've got to be an extreme conservative or you'll go broke [laughs]. So I think weathering the depression years is what saved me. I've never taken a long shot risk that I didn't have my rear protected, you know. Well I didn't get into the service during the war, 'cause, we were involved in war essential base metal production at Pioche during that time. Then I talk about the windup of Tecopa we're up into the late '40s, you see. Being in the lead-zinc mining business and all, why I was not allowed—couldn't have gone to war if I wanted to.

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## SOME CONCEPTS ON GEOLOGY OF EASTERN NEVADA

I mentioned, let's see, getting out of school in 1930, and then going to work up at Bauer, Utah, and coming back to Pioche, and getting into underground surveying and underground mapping of geology. And you know, mapping the faults because we had to trace the bed to where it was displaced by faults. And a little bit of stope geology, and then they transferred me onto surface work, where we were setting up a triangulation system. And this triangulation system was going to be the basis for an underground connection clear through the mountain. And I worked some on that.

And I think I did mention that Chief Beuhler put me to work on the insoluble residue laboratory. (He was the chief geologist for the National Lead Company, which at that time controlled Combined Metals.) My job was to follow in the footsteps of Mr. McQueen's work in the tri-state area. He had been very effective in identifying formations through insoluble residue (dissolving the rock, you know, small samples of the rock in hydrochloric acid) and coming up with

the insoluble fraction; identifying small fossils and other tiny particles under the microscope as diagnostic for the different formations. The same process did not show characteristic variety in the formations of the Cambrian limestones in the Pioche area. There was a benefit I got from that, however, in that I went through a lot of the geologic column of carbonate rocks taking samples for insoluble residue preparation, and I got acquainted with the general appearance of the rocks, and more importantly, acquainted with the sequence of the field appearance of rocks from one formation to another. The *USGS Professional Paper 171*, had segregated some of the lower part of the Highland Peak Cambrian formations that were not difficult to segregate like the limes immediately above the "Chisolm" shale, and what we call the "Davidson Blue," and then the "Davidson Dolomite," and "Davidson Black" were recognized readily as formation units. But, the "Highland Peak" generally was just lumped into four thousand feet of Cambrian limestones and dolomites, admittedly very



difficult to segregate. You had to kind of live with the geologic column, in order to separate the carbonate units in surface mapping.

So from there, and going to Bristol later with that experience, and applying some of that to Bristol, and identifying the so-called “Platy Dolomite” below the twelve hundred level at Bristol, and measuring its thickness, and finding it compared almost exactly with the thickness in the Ely range, I continued to have a good deal of interest in the geologic column, because it was rather important in predicting the depth to the ore-bearing horizons.

This “C.M.” ore bed is a black carbonaceous limestone embedded down in the Pioche shale, and it’s the first limestone above the basement quartzite. Therefore, when mineralizing fluids come up through the underlying quartzite and shale, and under the proper structural relationships, and probably at the right depth below the surface, and whatever other factors might be important, these mineralizing agencies act as though the CM bed is hungry for them, and so there’s a spread of mineralization in the CM bed.

There are other factors, that I believe, from long experience, are very important in that “blotter effect,” namely the carbonaceous nature of the bed, the thin-bedded nature of the bed, and the fact that the underlying siliceous footwall shale (we called it) which is maybe ten feet thick in a lot of places—layer of almost quartzite, which lays in there almost like a pane of glass. When the fault blocks get stepped around a little bit, why this brittle layer just under CM limestone cracks up, and it acts as a means of distributing the fluids to the bed that’s immediately over it, and allows the bed to become replaced as a blanket bed of ore. It’s very important structurally, I think, to explain why we had the wide channels of ore lying in this bed.

And there’s no use in this discussion, I think, of going any deeper into the theory behind the ore being there, except to say that most of the faulting has been pretty well demonstrated to be pre-mineral; and that the age of mineralization therefore, has to be quite late. As time went on and more studies undertaken by different people, one of ‘em, an important one was Dr. Earl F. Cook, who came in studying the flow-rocks—what’s called ignimbrite lava flows—which are fluid extrusives that apparently flowed across the country rather rapidly to seek their own level. The dates of these flows earlier than and offset by the faulting, has pretty well demonstrated that the mineralization has to be very late as compared with most of say, the porphyry copper deposits of the state of Nevada, which usually date from thirty million years before present on back. And this Pioche District mineralization, in both the Bristol mine and the Pioche area, I think can be demonstrated to be maybe in the order of less than ten million years ago. And I think too, that the mineralization of copper ores in the Bristol mine is probably due to an early porphyry copper occurrence somewhere down deep below the Bristol mine that has been reworked by later mineralizing fluids. Lale fluids picked up copper and brought it up, and put it down where it is in the high limes in Bristol. Now we’re talking about—well, studies have gone on since, you know, the ‘30s. I mean these interpretations started back there, and since *USGS Professional Paper 171*.

But the geologic column has been very important in looking for ore because of this bed that I told you about— this fifty foot thick bed that seems to act more or less like a blotter down there, embraced in the Pioche shale. And therefore, studying the higher formations, and knowing where you are in different fault blocks, can give you some

idea of where you're gonna find that bed. Projected position of favorable lime beds in relation to evidences of mineralization at the surface have been used to postulate good exploration targets. From years of experience only oxidized manganese showings have been recognized as surf act mineral leakage connected with known channels of bedded ore. The surface distribution of oxidized manganese coming from what was primary deposition as a carbonate mineral (manganese carbonate) becomes oxidized, and it's just a black waddy-looking manganese—at least it gives some hope that in the area of that manganese distribution there would be mineralization in the CM bed. And of course, it has to be recognized that if faulting is pre-mineral, there are chances for mineralization to come up and bypass the CM bed to where the CM bed is faulted out of that particular section, you know. And so there are a lot of vagaries to this thing. It isn't all a simple thing at all. And like most mining which is risky anyway, this simply adds to your problems.

Since we're on that subject, why of course I had a real privilege in working with [Charles F. Park, Jr.] Dr. Charlie Park (Dean of School of Mineral Science) of Stanford University back in the period when we were operating the Prince mine in the '40s. He was sent in by USGS to complete a map of the Ely range there and asked me to work with him a little on it, because I had been familiar with the formations. In fact, he encouraged me to make an application to join the Geologic Society of America and the Society of Economic Geologists, and he sponsored me. And I grew to have a high regard for Dr. Park, at that time.

We used to have lengthy debates over structure and so forth. And there was another fellow working there with him. Well, first, Jack Frost was there the first summer, who

is now working with Exxon as one of their foreign field geologists, I think has a very responsible job. And then following him came C. Mack Tschanz. He and I used to have the most argument, argument over thrust faulting, versus normal faulting. Mack with Pampayon has written, more recently, of the geology of Lincoln County, a professional paper, USGS. Very good job. And he finally came around to admitting the possibility of some of my wild thinking in that paper, on slide faulting [laughs]. In fact, I think here it might be well to state, in as simple terms as possible, that I developed through experience down there, not through any super intellect, but through continuous experience in the district, developed the idea that what was called thrust faulting in Professional Paper 171, wasn't thrust faulting at all. It's simply slide faulting off of the elevated mountain range blocks. And it couldn't be thrust faulting by any studies from other surrounding areas, because there has been no thrust faulting positively identified that was as late as it would have to be to involve those ignimbrite flows that have been definitely identified and age-dated. So, it's just that simple. And then if you call this flat faulting, slide faulting, and you have a reverse relationship of the material above and below the flat fault, it's also simple to explain that there's been a steep normal fault perhaps and usually not in evidence, because the slide fault has cut it off and placed older rocks that have been elevated out over younger rocks, giving a reverse fault position. But it's simply due to a combination of two normal displacements—the steep fault and the flat slide fault.

The application of this principle to mountain ranges in Lincoln County and elsewhere leads to the conclusion that some of these mountain ranges have been elevated tremendously more than any previous

geologic evidence has postulated; and that the steep bordering faults in some of these mountain ranges has to be in the order of from ten or twelve thousand feet up to thirty to forty or fifty thousand feet, in the rather late basin and range fault system. And I'd be prepared to argue with anybody on that point [laughs]. don't know whether you understood what I said [laughs].

And I think slide faulting has a good deal of importance in relation to understanding the oil in Railroad Valley— which I believe has migrated from a very deep source up into the broken slide fault rocks of both broken igneous rock and limestones in Railroad Valley, and capped by much later lake beds, which formed the cover. And that again is something I'd like to argue with somebody. [Laughs] Well, since we're on the subject, the structural concept did reach print after I came here to this office [Nevada Mining Association] in 1964, as a result of being asked to write up the geology of the ore deposits of the Pioche district, which I did for this Graton Sales volume of AIME.

Of course, the right answer to goin' after this structural concept and researching the thing, and getting it accepted in the minds of other people is another problem. And I've found that it takes years, to come up with a general acceptance of some new concept like that. It isn't somethin' you just print up and tell somebody. It doesn't get accepted. So there's a time lag. And I think the importance of this is very great for the state of Nevada in the study of structural geology, because if this becomes generally understood Lincoln County (where we don't have the confusion of "Nevadan" thrust faulting—that is, the earlier thrust faulting that is recognized in the Roberts Mountain thrust, and the Golconda thrust, and these others that are so pervasive in a lot of the state in the northern part and

the western part), if it's true in eastern Nevada, then the same thing is very obviously true around the other mountain ranges of Nevada. But when you're also involved with what is really thrust faulting, of a much earlier period, then there's some very, very knotty problems in interpretation. You see a simple-minded person (like myself) with enough study in that area can see this, where the fella maybe that comes from up in northern Nevada, tends to think, "Oh, that guys s just crazy, see." But you'd have to take him down there and rub his nose in it. I've never been able to get anybody to do that. [Laughs]

Well now, have I given you enough long-haired geology [laughs]?

I guess we'll start covering some of the terms that you asked me to be talked about, terms and names used in a mining operation, particularly in underground mining operation.

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## MINING LORE

### TOOLS AND TERMINOLOGY

Of course, you start out, you know, with the old-timer methods. Before my time, and it was long before my time, that they used the arrastra, and for hoisting had the animal, the mule or the horse, pull a bucket up by running around the shaft with the cable that'd go along the ground and over a sheave, and down the shaft to pull the bucket up (known as a horse whim). Those tools were before my time.

But, during my time, during the earlier part of my experience in the early, well '20s, we were still using what we call a stationary gas engine that was really run on light diesel oil, out at the Comet mine running the compressor that supplied air for drilling and for running a small air hoist. And I operated that, and had to now and then, repair it, like re-pore the main bearings and things of that kind. And this was a sixty horsepower "gas" engine. There's still some of these around the Lincoln County mines that are sitting there idle. Lincoln County now has very reliable electric power from Hoover Dam. But, those

gas engine days came after the steam power that was previously used, when even a small mine would have a boiler using wood fuel. They'd gather wood and run their little steam engine for either generating power to hoist with, or to run a compressor. So we've come up to the time of electric power and so forth, the time of my principal experience.

And the underground drifting—drifting is to drive out from the shaft, along the strike of the ore body, providing you're working in a vein. Lots of times you're not working in a vein. In Bristol mine, for instance, the ore bodies were very irregular, and there was no strike or form to some of them. Some ore bodies did have form, and others didn't. So the term "drift" in some mines, simply means a drive off of the shaft or on a sub-level. And so it's (the term is) used very loosely.

A crosscut—if you've got a long drive, then you cut across it. It's frequently called a crosscut, when it doesn't crosscut anything. But, the term "crosscut" truly means, in a vein mine or fissure mine, a drive that cuts across the formation; where the drift would

be on the strike, and the crosscut would be across, the formation. So, after you've gotten underground, you have those two terms for level drives.

And then you have the winze, or sometimes if it's large and deep, it'll be called the underground shaft. And the collar is another term. That's the beginning point to go down. It's the collar of the winze or the shaft.

And the drilling is done with leyners, and a leyner is mounted usually on a vertical or horizontal bar, to hold it, because it's very heavy. And sometimes these leyners are heavy enough so it'd take two men to lift 'em. And the evolution of this came to the jackhammer and jackleg. The jackhammer really came first. The jackhammer was first named, I think, as the Ingersoll-Rand hand-held machine. I think it was sort of a trade name—their machine—but it became loosely used, and any hand-held machine was called a jackhammer.

And this evolved about in the late 1940s, the leyner and the jackhammer, in underground use, were pretty much replaced for stoping ore by a jackhammer mounted on an "air leg" that would support it. And a man, all he had to do was balance the hammer on the top of the air leg, and instead of using a lot of different changes of steel, which would be limited by the length of a shell of a leyner, he could take a long piece of steel, and run it clear into the ground, if he didn't have to have changes on account of wearing the bit gauge. So, most of the underground work, in stoping particularly was then done, instead of with a leyner, would be done with a so-called jacklegs, what I'm talking about, in a small mine.

Now you get into the larger underground mines (particularly where they're on bedding like the Pan American mine in Lincoln County); they now have a mobile unit with heavy machines on long shells that are

either operated by a screw, or operated by a pneumatic push to the drill. And these are—(of course, there's nothing unique about these names), but you call the machine that is either on a rail, or trackless equipment like on rubber-tired equipment or something, or on what they call crawler tracks like a bulldozer has; they call these machines their "jumbos." And the "jumbo" is, of course, a pretty common thing now. It would be used in today's operation, instead of driving a heading, or drift, or crosscut, with a leyner, hand-operated leyner, or with even a jackleg, why, instead you'd have a type of "jumbo" in order to make better progress. The "jumbo" came for drifting and cross-cutting drives, was pretty commonly used in, oh, in the '40s, all through there. And sometimes you'd make your own "jumbo" in the shop, usually these would be on mine rail.

Now the early stoper—. A stoper is a machine, an air machine, the same as a leyner or a jackhammer, but it's mounted with a stiff leg that goes directly out behind it, and you point the whole machine in the direction you're gonna point the hole. And it's used in driving raises, or advancing stopes upwards. And the early ones were called "wobble-tail." And the reason for the "wobble-tail" name, obviously, was that they had no ratchet for rotation of the steel. Later, machines had a built-in ratchet that the air operated as the machine was drilling. As the hammer moved back and forth, it kept the steel turning. But the early stoper, the "wobble-tail," had no ratchet. All it had was a hammer that kept hammering the steel, and the steel had no collar for holding it in the machine, because you were always drilling up. And so you'd have special steel for the "wobble-tail," or for the stoper, for that matter. But, you had a handle on it that stuck out about a foot, and you'd turn it with your hand; as the machine was



operating, you'd turn it back and forth with this handle that stuck out from the machine in order to keep the steel bit cutting all parts of the hole bottom.

Now, when you're driving a heading, the holes that you drill have names. The cuts, cut holes, are drilled at a slant, and usually they're drilled from the breast of the heading (and the name is self-explanatory) down on the slope toward the bottom of the heading, as you're advancing. Those are called cut holes. Now there's an upside-down cut hole, which would be drilled from, say, waist height up on a slope, and then you're breaking the ground out first with that kind of a cut hole. But, the common one is the one that's drilled down, either way those are called cut holes.

Then you have relievers. These are the next, and then breast holes, and back holes (which means, say you might have three cuts, and then some relievers drilled above those, and then the breast holes, and then the back holes), and then the lifters are the bottom holes drilled right down on the floor. The sequence in detonating loaded holes is critical, so that the cut holes are supposed to go first, and cut back in as far as the depth of the round. And then the other ones just break to it. And it's very important that the cut holes go first.

And this reminds me of a story [laughs] about Jack Buehler, who was at one time my boss, and later my partner. Jack Buehler told a story about taking a bunch of girls through the mine up at the, I think it was the Iron Dragon mine in Utah, out in the Eureka district. And these high school kids would come and take a tour through the mine. And this foreman was explaining when they got to the heading, telling them about the cut holes, the relievers, the breast holes, the back holes, and the lifters; and he said, "The cut holes have to go first in order to make the round break. If they didn't

go first, why, the first holes wouldn't break anything, 'cause they're driven in almost straight, and they wouldn't have any way of breaking out." And he explained this, and one of the girls was very much interested, and kept taking notes, and trying to draw a picture of it. And she kept repeating the question, and he was getting a little irritated at her. (This is a crude miner, shifter. A shifter, by the way, is the shift boss—is the boss—direct boss over the men, in say, a section of the mine on a given shift. And he is under the foreman or the superintendent over him.) So, anyway, this fellow was explaining, and finally about the third time, he was getting pretty irritated. And finally he said, "You drill the cut holes, the relievers, the breast holes, the back holes, and then the lifters." And he says, "If the cut holes don't go first, you're screwed." [Laughs] And in those days, that was very embarrassing. Today it wouldn't be. [Laughs] Well, anyway, that was quite a story as I remember. Very funny at the time.

Now let's see. Well, you come to the shaft, of course, and you hoist the ore, older mines commonly hoisted loaded mine cars in which case they call it caging cars. You'd have the mine cars, a train of mine cars come out to the shaft (or maybe in a smaller mine, single cars might be just hand pushed, and a larger operation might have a motor trammer, which is commonly a battery locomotive running on rails, and you haul out a train of cars to the shaft station, where you'd have switching arrangements and chairs to rest the cage at track level.) You roll a car on the cage, and if you had a double compartment shaft and the cage is in counter balance (which is common), why, one side would be down at the level that you're hoisting from, while the other one is up at the collar of the shaft, and somebody up there is taking the car of f to dump it into the ore bin. And down below, the



empty car is taken off and a loaded one is put on the other side just about the same time; and then when it's ready, why, the other one comes down, see. So that's caging cars. But, also, and more common, an operation would be set up with skips; either a single-compartment skip or double-compartment skips. Only a skip is loaded from a pocket, called a skip pocket down under the shaft station where the cars come out and dump into this pocket. And then there's a chute that can be pulled into the skip, and then the skip tender—. (That's another name, "skip tender" is a man that handles the skiploading for hoisting and lowering all materials including men.)

If it's a two compartment shaft, he's just down at the pocket loadin' out the ore or waste, whatever's being hoisted; and when one side comes down, he loads that, and the other side, he loads the other one. And when he's emptied the pocket, why then he goes to a different level, or whatever else needs doing by the hoist.

In sinking a shaft, in my time, this was usually done by hand. That is to say, I don't mean the whole operation by hand, but I mean the miners were drilling with heavy jackhammers or leyners used as jackhammers, down holes, of course, and sometimes they'd be sinking below the water table, and have to wear rubber suits in order to keep relatively dry. And there'd be several men on the bottom, in a shaft, like say, the Caselton shaft, which was a two compartment plus man-way, pumpway compartment.

And I recall in the early '30s, when that was being sunk, I was regularly measuring it up on measure day, and go down, get yourself all wet with about 800 gallons a minute of water fallin' down on you from higher up [laughs]. And after the blast, why all the mucking—. Mucking is another word, of course, where they're picking up the material

by hand with a shovel, and shoveling it into the sinking bucket (which is frequently called a can) that's under a crosshead. Now what happens—the crosshead comes down, to rest at the bottom of the timber. You're timbering the shaft as you go down, and you have a timber across that stops the crosshead, but the cable goes through the crosshead, and holds on to a hoisting bucket; and the bucket goes on down to the bottom, and the men muck the blasted rock into the bucket. And when they ring the hoist signal and the bucket comes up, it picks up the crosshead then, and goes up to the top, and safety door let down by hoistman engaging a tail chain under the bucket, so lowering dumps the bucket into a surface bin for disposal. And that's the operation of sinking a shaft, in my time.

Now they've got more modern devices, I think now, for bottom mucking, and so forth, to get away from the hard, hand labor, because that's what you call a rough bottom when you don't muck off of a muck sheet. And you wonder what a muck sheet is. Well, as used in a heading where you're hand mucking it, is a plain piece of steel, maybe three-feet wide, or four-feet wide (depending on the size of the heading) and several feet long; and you blast to get most of the muck piled up on the sheet, and then you can use a square point shovel, and you can do a better, faster job of hand mucking into the car.

Well, of course, in more recent years, and the development came during my time, we saw introduction of the Finley mucker. I don't know whether I mentioned that to you anywhere before. But, the Finley mucker was invented and developed at Anaconda's Butte, Montana operations by a man by the name of Finley. And one of the first two Finley muckers came to Pioche—I've forgotten where the other one went, probably somewhere in Utah—and the one of 'em that came down to

the Caselton operation of Combined Metals, was used on the eight hundred level of the shaft in driving a heading south to explore the CM bed. And I was laid off of the engineering crew in the fall of '31, I guess it was, somethin' like that. But I went on working as an operator of the Finley mucker, driving that heading. And my roommate, Rod Phipps (real good personal friend of mine, and a churn driller, formerly) was taking the other shift. And we were running a competition on how many cars of muck we could muck with the Finley mucker. So that just about dates the time that the Finley mucker came into existence. And it's an overshot mucker run by, at that time was all run by air. And the bucket was on a cradle or rocker, so that as you let the bucket go forward, it would also dip down and rest with the lip right on the floor; and then you turn another handle, an air valve, that would activate the power motor, air motor, driving the wheels. And so you'd drive this vehicle into the muck pile. And then when you went as far as you could go nudging into the muck pile and got a dipper load, you'd activate the other lever that raised the bucket on the cradle and overshoot it you'd be standing on the side of the vehicle—and it would center the thing first, because you could turn it on a swivel after you had the dipper down. You could turn it and pick up along one side or the other—and then as you raised the bucket, it would center first, then it would overshoot right by your head, and over into the car in back of you, that was hooked onto the back of the mucking machine. And it was a tremendous advance really, in driving headings, because prior to that time mucking was all hand mucking, like I told you, where you have a muck sheet, and you'd use square-point shovel and so forth.

Well, there really hasn't been very much advance in mucking over this old Finley

mucker. I think they've come up now with some rubber-tired equipment that you can use. But, I don't know that that's very common. There's been so little underground mine development over a period of some time, you know. All the big operations have been in copper usually, and goin' into open pit operations to get the ore—that for some twenty years there have not been a lot of places operating underground properties. And in Nevada here, there was quite a period in which there were very few underground operations because of the low precious metal prices, you know. And even though you might have a lead-zinc mine, it was maybe established at a time when the precious metal price meant quite a bit to the value of the ore, because values are all in there together you see. So, there hasn't been an awful lot of development for the typical underground mine where you were operating a fissure or something like that.

Well, let's see. We've pretty well covered, I think, the common terms used, just in talking about these things, of the things that I hadn't made notes of. Came to mind 'cause of a muck sheet, a square-point shovel [laughs]; a round-point shovel you use when you're "on the rough," called the rough. And you're on the rough, naturally, when you don't have a muck sheet to muck off of. It's logical enough.

## **BLASTING**

Dynamite, so-called powder, blasting powder, comes in different strengths, of course. And there's no use getting into the technical side. You know, it's nitroglycerine, supplied as "gelatin;" it comes in different strengths. And then in some ground, you use a higher strength, like sixty percent they call it, and other places use forty, and so forth, depending on how the ground breaks, and

how tough it is to break. It's pretty safe to use really. You could throw sticks of dynamite at people, and scare 'em, and it's not gonna hurt. It won't go off. A straight jar, unless it's a super jar that a cap can give, a blasting cap can give—it won't go off. The nitroglycerine in a box of powder, if it's sittin' around long enough, can leak; can migrate out of the dynamite into the paper, into the box. I think there have been cases where old dynamite is touchy, you know. And there've been accidents for that reason. But you can take dynamite and burn it, and it'll just cause a fire. It won't cause a big blast. So it's pretty safe that way.

But, when you have it in a drill hole that's where you're driving a heading; and you've loaded the holes, and all the holes didn't go off, and you've got a "missed hole"—I've known of several cases where a man would drill into a "missed hole" and the powder would be comin' out of his drill hole, you know, and it didn't go off because the drill didn't hit the primer. But, if he drills into a "missed hole" and hits the cap that's inserted on the end of the fuse and into the powder to make it go off, the cap'll go off with the pounding of the drill on it (and that's strong enough to cause a cap to go off), and then, of course, the cap will set off the remaining dynamite. And there've been numerous cases over a period of time, of people getting blasted by drilling into a "missed hole," and hitting the cap.

And in my own experience, out at Bristol we had one case of a man with a large family, drilling into a "missed hole."

And another case, two cases at Caselton we had. One of 'em was in a raise, but I wasn't with the company at that time. It was just before I went with 'em again. It must've been about '43 or four, I don't know. They had four men in a raise that had a blast; and whether it was a "missed hole" I'm not sure, or something that set it off. I think it was during the time

they were loading powder that somethin' happened. It would probably have been, maybe the cap being jammed against the wall of the hole while loading, or some thing where it set off the powder. Killed all four of 'em.

The other case was in the Caselton mine, while I was there. The miner drilled into a "missed hole," and the blast blinded him. And he committed suicide. He got over this, and he could see just a little bit. He even could see to drive his car around a little bit, but—. And he was an educated person. He had a family. But it just got next to him, and he couldn't take it, and he committed suicide about a year later, I think. So, it's been, for the miner, a hazard.

So, underground mining has had, in the aggregate, probably quite a few accidents of that kind. Drilling into a "missed hole" is a bad possibility—one of the hazards that still remains with underground mining. But the kind of powder they're using (the kind of explosive they're using I should say, to be technically right) has been changed so that most of the explosive that's now used underground, in blasting drill holes, is actually fertilizer. Ammonium nitrate fertilizer pellets. And, they use a stick of dynamite to detonate the nitrate. Set it off with a fuse and blasting cap just like straight dynamite. The charge of pellets needs some carbon with it. That is, they usually use fuel oil with the fertilizer pellets, and, in a measured mixture; that makes it just about as good as dynamite. In fact, it's quite a saving in blasting underground. But, it came after my time. I've never used it, except out like at our perlite quarry, or outside somewhere, where we were still operating after the mines went down. I've seen it used there.

And, there was another kind of powder—an ammonia-type powder. Trade name "Trojan" that didn't cause the headaches that regular powder caused. This ammonia-type

powder was used sometimes in dead air places you know, where you could get by with less ventilation. But, that's about all I can tell you about dynamite and powder.

### **SUPERSTITIONS**

Well, superstitions, among the public, of course, are, if you had a stick of dynamite and threw it, why, I laughs] it'd blow you up.

Well, the superstition that women shouldn't be allowed to go underground, is one that I faced several times. And especially this was true among the Italian work force out at Bristol. They didn't like to see a lady go underground. Other places, I think, among the, well say, the Mormon community, and you know, the American fellas, I don't recall that having any particular significance. And I can't think of any other superstitions that, you know, particularly related to my experience or my time.

Of course, there're the superstitions of having a dream, and finding ore bodies, these things that I've heard stories about. And I think there's supposed to be the mine up in Utah somewhere, that was discovered by a dream—went out and dug where nobody else would dig, and came up with a big discovery. But this was just a story in my—I mean I wouldn't have any verification of that.

Well, speaking of superstitions, and how superstitions can develop into something that doesn't appear in the individual's mind at all, as being a superstition, I'll tell ya a little story that happened to me, personally. There's a group of claims, Mountain Lion claims, over the Highland Peak area, that eventually my brothers and I acquired from the fellow that had it. He owned a bar in the town of Pioche, and he died. His estate had to be settled. And he had two different properties. One was south of Bristol, and the other property was

this Mountain Lion property. Well, Johnny Valente was his name. While Johnny Valente was still alive, and for years before the trip I made out to look at his property, why, Johnny kept the mine going by the more irregular workers in the mines. They were usually, oh, had lots of experience, but they liked their liquor pretty well, and so they were always in debt to Johnny Valente, because he was always ready to put 'em in debt to him. And then when they'd run up a bill, why, he'd have a place for 'em to go work it off, out at his mine. It'd be either the Mountain Lion or it'd be the Wood Butcher mine, south of Bristol. And of course, they got almost no money out of him. He'd take the food and rationed liquor out to 'em, and they were usually in debt to him. And they knew their work was not a highball job. They'd go out there to dry out, after being on a bender, you know. And of course, maybe the first day or two, they didn't do too much work, but on the other hand, I've seen the opposite happen. A fella that was mad at himself for going and spending all his money, or for going and drinking so much that he got sick—why, when they come back to work they'd just work all the harder to work it off, you know. A sort of self punishment. But anyway, Johnny would send these fellas out, and there were some that were perennially doing this, all the time. They'd come in town. And he'd advance 'em—after they'd kind of worked it off a while—he'd advance them enough to get drunk on again, and then they'd be back out there, see. Well, I'm a little bit off the story in telling that, but it just occurred to me that that was a typical thing that was going on in the earlier period when I was out there.

Well eventually, Johnny got murdered. Some fella shot Johnny. And I've forgotten. It was a barroom thing of some kind. I can't tell you the details. But anyway, Al Scott, the attorney at that time, had to settle the estate.

And before Johnny had died, why, I had gone out to look at his property, and hiked clear over the mountain, from the east side to the west side. And he took me over the trail. In fact, I went with a friend of mine, over and down to the property where he'd been digging out ore on the other side, and we saw some showings that the old-timers, had dug way up on the Highland range, I don't know how long ago. But these were on unpatented mining claims. There was a shaft about seventy feet deep up there, and a little adit that was apparently started to connect with the shaft, and two other diggings where they'd dug out a little bit of rich ore way up in the high limestone horizon.

And after returning from this trip, why, I had—now I'm gonna tell you what I think happened—I had a dream about this walkin' over the mountain, how Johnny Valente had taken me under a tree and showed me a little diggin', probably not over a foot deep, but two or three feet long, and a streak of lead carbonate ore about, oh, two or three inches wide at the widest, but a showing that you'd certainly want to dig on if you had the property, see. I had that in mind, and it got fixed in my mind, that that was there, and later on, of course, it was not a showing that you think you can make money on or anything like that, but it was just an impression I had. And so later on, when we acquired the claims, and Al Scott was selling it (we bought the group of claims for a few hundred dollars), and then I had to do quite a bit of mapping on it. In fact, before Johnny died, why it was the Prince company that had an option on the claims. And while I was mappin' it and the Prince Company had it, I looked, and looked, and looked, and looked for that streak of ore. And I'll swear to you today that there wasn't an inch of that ground up on top that I didn't

cover, and I couldn't find that showing of lead carbonate. And so finally I went to this friend that had been with me and Johnny Valente, walkin' over the mountain, and asked him if he thought he could find it. He said, "What are you talkin' about?" And I described this. He said, "We didn't see anything like—. I never saw anything like that." I thought well, there you go, see. Now, if it hadn't've been that that friend was with me when we did walk over the mountain—it was easy wasn't it, for me, with time drifting down the line, to let that little, little thought slip into my mind as a fact, see. And I'm not crazy, but I could've continued believing. If it hadn't've been that friend was along, I'd still think Johnny had shown that, and that the wash or the rains had covered it up or somethin' like that, see. [Laughs] So, there's an example of how a thing could happen. My mind's eye can to this day see the streak of lead carbonate.

There's the superstition of the willow stick, of course. And, here you come into an area that I had quite a bit of experience with—that even some of the—without mentioning any names—some of the officials, well, engineers, and people connected with Combined Metals, actually hired a fella with electronic equipment in the early days of geophysical exploration, that claimed to be able to put certain elements in a little tube in his machine, and then he'd be prospecting for that with his electronic equipment. And of course, to me, this was *really* far out, and there was no foundation in it at all. He didn't ever find anything. But they hired him, and he had a real fancy, big box with all kinds of dials and equipment. And he'd shoot these currents into the ground, and tell you what to look for. He'd get the information on where you were mining, and then he'd try to trace it where it was gonna go from there, and things



like that. And, of course, some of us would laugh at this, but still, he was hired and paid to do it [laughs], by somebody else in the organization.

Of course, geophysical equipment came into existence, and Mr. Hoover's son, Herbert Hoover, Jr. became interested in geophysical prospecting. And he was, as I understand it, criticized by his father, who thought it was sort of a wild idea to even follow such a thing. But Herbert Hoover, Jr. was highly successful with his—what'd they call it? United Geophysics Company? His was one of the earliest companies to use electrical geophysical instruments and develop them; and found a copper mine and mining district (that is, rejuvenated a known area that had showings of copper and might have been developed for some other reason), but nevertheless he ran the geophysical equipment over the area and pinpointed where to find the high grade in a very low grade environment, and was successful with it. In fact, from there on, I think Herbert and his organization were successful several places around the world. And, so, geophysical prospecting did come into its own. And think he was one of the pioneers.

And speaking of the forked stick, or "divining rod" in prospecting, for metals; you can turn clear back into the pages of *De Re Metallica*, that was translated by the Hoovers, Mr. and Mrs. Hoover—this was the first treatise on mining, written in the 1500s. And in there, they describe, at some length, the arguments over the willow stick or these things. And the writer warns against relying on it too heavily [laughs] in very beautiful language—it should be quoted somewhere. And in that book—that's one of the most fascinating books on mining, because they describe the veins, you know, and they

describe how to build milling machines, and how to build your assay furnace. Everything is done from scratch, you know. And how to reduce the ores and how to smelt the ore—of course, usually in a very small way. A very fascinating book, and with all kinds of woodcuts in it. I'd refer anyone to, if you want to really delve into the origin of mining, you know, as we know it. And you'd be surprised at how much of our present technology really grew right out of things that they discovered back there, at that time, without knowing anything like what is known now about chemistry and physics and mechanics. In other words, cut and try development.

One of the things that intrigues me, and I've got to get a set of needles for determining the grade of bullion—that is gold-silver bullion, you know? They show a picture in there of twenty-four needles. They're I suppose, pencil in size, pencil-like, on a ring, twenty-four of 'em, grading all the way from one in twenty-four parts—one part silver in twenty-four total—up to one part gold in twenty-four see, so that this relates direct to the karat bullion grade; twenty-four karat would be pure gold, you see, if you're talking gold. And ten karat would be ten units of gold to fourteen units of silver, you see. And the way you use it, is to rub the item to be tested or a "touchstone"—this is a stone that has a rough surface something like the bottom of a non glazed porcelain dish. You know, some of these jugs that are made with a rough surface, or in the laboratory, they have the streak plates. And it really was a streak plate that they'd be using. You want to know what karat, or how pure your bullion is, you rub it on the stone. It'll make a mark. Then you compare it with the mark that one of these needles would make, and your expert can say, well this is fifteen karat, or eighteen



karat, and so forth. So I gotta have a set of those. [Laughs]

### CLOTHING

You asked about mining people and their clothing. Of course, in the underground mines, they come to the change room, and they take off what clothes they wear to work, and put on their diggers (so called), and take the diggers and go underground with 'em. There's a vast difference of course, between one man and another, as far as how clean he keeps his diggers.

We had one man; he had a nickname, "High Pockets" from Pioche, that would come over to the Prince mine, and he always wore boots, whether he was goin' underground or not. But he never used the change room. He'd come over in his clothes, and he developed an odor that even the other miners couldn't take. And so when he went underground, he had to go alone on the cage [laughs] He worked in a sort of a leaser type situation. He was diggin' on a streak of ore, and pretty good at it. And he'd be put to work by himself over there, and dig out his own ore. When it came to goin' home though, you had to watch him. He was liable to have sticks of powder in his boots, because he also had a prospect that he was workin' on [laughs].

But, going on with this business of what their customary wear is. Whenever you get out in the desert country, with the old time prospector—which reminds me of old Schodde, who had the Schodde mine. The mine was actually named after him in the west slope of the Highland range. He'd go to his mine, and he sold it several times over. He knew just how to dig on a little streak of ore, and the minute he made a little showing out of it so that it looked like it was opening up, why, he always stopped right there. And then

he'd deal with somebody on his mine. And he shipped a little bit of ore, but it had very little production up to that time (late 1920s). Well, some of it was pretty high grade ore, they say, maybe a hundred tons or so. But, anyway, he always went around in woolen underwear. And he didn't wear a shirt. But he did wash it, but it would get to looking a very dingy gray, you know [laughs], because he didn't bleach it or didn't really do more than you might say, rinse it out. And he'd wear a pair of pants or jeans or something like that over the underwear. But, other than that why he had his long-sleeved woolen underwear. And this is not too typical of the more moderate climate like Lincoln County, Nevada, but they tell me that down in the desert country of California where it's much warmer, that it was more typical for a prospector to wear woolen underwear right in the middle of the summer, 'cause it was insulation. You think of woolen underwear being something to keep you warm; it's true. But it also keeps you from, you know, getting burned by the sun. So you wear a broad-brimmed hat and woolen underwear. And when you perspire, why, your perspiration evaporates with cooling effect, and you don't get the direct rays of the sun. I suppose it wouldn't be healthy to go out in the middle of Death Valley without anything on, because you'd quickly get too much, you'd get sunstroke. And these prospectors apparently could do; you know, they could get by where other people wouldn't. And I understand that in the earlier days especially, why the people generally down there in that desert country wore woolen underwear in the summertime. That's an interesting thing.

Well, you were mentioning this Stever experience about the blowing up the sewer. And I have a special thing about sewers, and working on them, and so forth, that permeated my existence.

I started out as assistant change house plumber, was one of my first summer jobs for a day's pay at the Virginia Louise mine—a steam boiler that heated water for the men to take showers. And shortly, the head man was put elsewhere, and I was the change house plumber. But, also about that time was when I was still going to school in Pasadena, but vacations and summer vacations and so forth, they seemed to save up the sewer jobs for me to take care of. Crawling under the houses, and working on faulty sewers [laughs], cleaning 'em out, and so forth.

Well, I've never gotten away from that. I've had those jobs—in fact, I just recently had a job at the house we got for our daughter—the first thing we discovered was the sewer wasn't any good. So, I've never really gotten away from that. Somehow, other people seem to avoid sewer duty [laughs], but I can't get away from it. Okay. Enough for that.

### “IN” JOKES

Well, you wanted to get on to some of the horrible type of stories that miners like, and the kind they really get a kick out of, and stories get pretty crummy, you know. And yet, among a bunch of hard rock miners and men, you can get a laugh out of 'em. This is an example. (I suppose that you could go on *ad infinitum* with these stories. In fact, I must've heard a tremendous number of 'em that I forget, because it's seldom, any more, that I run into somebody [laughs] I can relate these stories to. I used to know quite a few of 'em you know, when you're hobnobbing with the fellas, but I kind of forget 'em.)

One of 'em, you mentioned this one about the high grade ore when the foreman would come out of the mine, and you'd ask him how the face looked. He'd just blasted into a new face of ore. If it was a good-looking face of ore,

why he'd say, “Oh, it shines like a diamond in a goat's ass!” You know. And you'd ask him how steep the fault was that he went through to get to this new face. “Well, about as steep as a cow's face,” indicating, as I think I said before, most of these fellas where I worked, mainly in Lincoln County (during the time that I was close to the men, you know, and going through the mine all the time), came from southern Utah. And they had a farming background, you know? And they were darn good workmen, and used to work, because they were put to work when they were kids, you know. Today, we have the problem that so many young people aren't put to work early enough to know what work or responsibility is. But, anyway, that's the kind of crew we built up.

And, one of the stories, for instance, that went the rounds was about the old bull and the young bull. The old one and the young one were at a fence, lookin' over the fence at a bunch of heifers. And the old bull says, “Boy,” he says, he started stompin' a little bit. And he said to the young bull, “Let's break down the fence and go take on one of those heifers.” The young one says, “Hell fire. Let's take 'em all on!” You know, like that. [Laughs]

Another one I made note of, was the miner that was mining ore and shippin' it to the smelter. And this goes to the idea among small mine shippers, direct-shipping ore to the smelters, and it's probably quite true, that people other than the miner himself are the ones that make most of the money out of mining ore. For instance, *it is* a fact that in lead-zinc mining, and milling, and producing, there is about one-third of the total metal price, on the market, that goes to the refiners and smelters, about a third of it goes to transportation, about a third of it comes back to the mine, which, if it's a lead-zinc sulfide mine, the mine has to operate

its own mill, and mine its ore, and so forth. So they have to do the whole thing on about a third of the market price. Well, this story then, relates somewhat to that. I have shown why the miner doesn't see very much of the market price coming back to him. And so the story is that the miner was shipping a carload of ore that he had figured would pay; and so he laboriously mined it, hauled it to the railroad, got it shipped, and when finally he got the report back on it from the smelter, why, after the deductions, there wasn't anything left. In fact, he owed about five or six bucks [laughs] to pay the balance; you know, after smelter treatment charges, and all the rest. So, hell, he didn't have any money, but he had some turkeys, so he wrote a letter to the smelter superintendent and told him that he didn't have any money to take care of his indebtedness, but he was shipping, under separate cover, a turkey, that maybe this would take care of his indebtedness. And so time went on, and they accepted it all right, wiped his indebtedness off. And in due course of time, why, another turkey arrived [laughs] at the smelter with a note from the shipper that he was shippin' another car of ore [laughs].

This reminds me of something, an actual fact that happened, and it caused quite a little fun around the property. Combined Metals Reduction Company had a bunch of checks printed, bundles came out from the printer, and nobody noticed until they made up all the checks for the payroll, that the checks said not Combined Metals Reduction Company, but Combined Metals *Deduction* Company. [Laughs] The deduction business is quite a deal among the miners. Most of 'em aren't very good at keepin' track of their accounts or anything, and they frequently think that Mr. "deduct" has his hand in their pocket.

Well, another story that went the rounds among the miners and prospectors, is the

fella that came into the smelter office with a sample of high grade, and laid it in front of the smelter superintendent's desk, and said, "What'd'ya think of that?"

And the smelter superintendent said, "Well, that looks pretty good," he says, "but usually we see a lot of these specimens like this;" he says, "we have learned from long experience that high grade like that just comes usually in small bunches, and doesn't really produce very much. But," he says, "we're generally after a deposit that's big, and usually it's low grade, and it has to be worked with big equipment, and a big plant, and concentrating facilities, and everything;" and he says, "we've stopped sending men out to look at these high grade showings. They're usually just little streaks."

So the prospector left, but in about a month he came back. And he laid a rock on the desk, and it didn't look like much. And he says, "I think I got what you want."

The smelter superintendent said, "Yes, but what have you got?"

He says, "It's just what you wanted—it's a whole mountain. Big? My God," he says, "Low grade—Jesus!" [Laughs]

Another one about a sample. Maybe it was the same superintendent of the smelter, and saw the sample laid on his desk. And he happened to be a horse fan, or raised horses also, on the side, as a hobby. And when the fella came in with his high grade sample, he picked it up and looked at it. And he said, "Well, that's pretty good, that's a pretty good lookin' piece of rock." He says, "I'll show you my favorite horse," and he pulls out a horse hair [gesture, laughs] and lays it on the desk [laughs].

Here's another one that went the rounds, and was considered kinda funny. A prospector goes to the big city lookin' for somebody to help him out. Gets a room in a hotel, and he

was ragged and dirty, and he had to clean up and put on another suit of clothes, and so forth. And he got in the tub, and by golly, he didn't have any soap. And so he had to get out—wet—and went and rang for the bellboy, and the bellboy came to the door. And he let him in. And the fella jumped back in the tub, and as he was doing it, why, he told the bellboy that he didn't have any soap, and he wished he'd go and get him some soap. And the bellboy just went to the door, and just as he was closin' the door, why, this fella let out a—expelled gas under the water. And the bellboy was a long time comin' back. Finally, when he came back, why water was gettin' cold in the tub, and the fella was gettin' madder and madder all the time. The bellboy finally returned, handed him the soap, and he also had, in his other hand, a bottle of beer. And the prospector says, "I'm glad you brought me the soap finally. I thought you'd never get here. But, what's the beer all about?"

"Oh," he says, "just as I went out of the door, I'm sure, I heard you say, 'Bbell bboy, bbring me a bbottle of Bbudweiser!'" [Laughs]

Then the prospector went to heaven, and found that there were quite a few other prospectors there. They hadn't all gone to hell. And here it was; streets were paved with gold, and it was really quite a place to be for a prospector, in a way. But it soon became boring. And this particular fella, the late corner, got bored, you know—there wasn't any good stories among former prospectors about where they'd found new showings and so forth, and it kind of rankled him. So he started a rumor that there had been a gold discovery down in hell. And, first thing you know, why, two or three of 'em were gone. And the rumor went on a little while longer, more prospectors left, and finally he was the only one left. Without his prospector friends and after quite a little while, why, our prospector

got so despondent, and so lonesome for these other fellas, that he finally went to St. Peter, and asked to be let out, and he wanted to go down to hell. St. Peter said, "Well why, what's the matter with you? I notice that the other prospectors have gone, telling me that there's a story going the rounds that there is a new showing of gold down in hell. Prospector says, "Yeah, there might be something to that rumor. I'd like to go down and find out." [Laughs] That's typical of the prospector, and there's more truth to that than you might imagine.

They're a breed—the ones that actually find—I have known two or three—the ones that really spend whatever time they can, and of course, they usually have to earn a living some way or other. But, it isn't the value of the find, really that steams 'em up, it's the prospect of reward—the prospect of finding; and when they find something that looks pretty good, they lose interest right away. They want to go lookin' again. And this is a fact. I've seen it happen, that a feller'll open up a fairly good little showing, and rather than digging on it some more, he'll go lookin' for another one somewhere, see. He'll think maybe he'll find a bigger one, or a better one somewhere, see.

So, it is a trait of the prospector, and it's a thing that people generally don't know, and it comes into what we're gonna talk about later, the affairs of the Association in the mining industry and legislation—that if you don't retain the prospect of reward, in the equation, people aren't gonna look, because it's that feeling that when they find something, they can have it—they don't have to go with their hat in hand and ask the government to give 'em a lease or have it put up to competitive bid, which of course, would completely rule out their desire to look. And, surprisingly, most deposits are found by the individual prospector or a small mining company

following after the prospector, and maybe are reactivated a dozen times before they get big enough or important enough for a sizable mining company to step in and buy it. And then they use their geological department to appraise it and so forth, but they very, very seldom send their geological department out and find a mine in this western desert country. Okay.

Back to stories, there's the one about the doctor in Pioche. It used to be told on the doctor that was there prior to Dr. Hastings. Dr. Hastings was there for most years while I was there. And I've forgotten what the name of the prior doctor was. But, they tell about this patient that was about eighty years old that married a young bride, and was going off on his honeymoon. And he came into the doctor to say that he was a little bit afraid that he wouldn't be able to perform the ceremonies expected by this young bride, and is there anything that the doctor could give him to help him out so as to invigorate him and make him potent? And the doctor said, "Well, really, Joe," he says, "the medical profession has been interested in this, of course, for generations, ever since civilization started," but he says, "and they're always comin' up with somethin'. There are herbs and roots and medications and everything," but he says, "to the best of my knowledge, there's nothing that really works. But," he says, "you never know. Somebody's liable to come up with somethin'," and he says, "I have a new pill here. You can take it along and try it." And he says, "I'd like to know how it works. They claim that it has this potential. And I don't believe it, but I'd like to know anyway how it works."

"Well," he says, "how will I let you know—?"

"Oh," he says, "send me a wire, and say, 'passed examinations' or something like that." So, a couple of weeks went by, and nothing

happened. Finally, he got a wire. And it was a very simple wire; it said, "Flunked in everything but French." [Laughs] Now, that's terrible. I shouldn't—.

That's all—. I don't know when I made these few notes, but there're oh, there're just thousands, of course, of stories. This is along the vein though that the miner, and the reason I tell these most horrible ones is that, it's in that vein they really enjoy conversing and talking with each other and so forth.

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## IDEAS ON SOCIETY AND CULTURE OF THE 1930S IN EASTERN NEVADA

Now we're gonna be speaking a little bit about the general situation in the 1930s, and some of the feelings that a lot of us had who were actually in the business of tryin' to make a living from scratch. And I guess we were living pretty close to the ground, pretty close to reality. And of course, the depression had hit, and we were in it and later coming out of it. The first thing that I would say is that we had the feeling that the program—that is the people that I was associated with—had the feeling that the program that Mr. Roosevelt initiated in trying to bring us out of a depression, was in truth a delay of the natural process that would've gone on to bring us out. And in many cases, Mr. Roosevelt did things that went against the grain, as far as we were concerned. And I'm especially speaking about "we" as the ones close around me: the family, the mine operators, and I'd say some of the men that I associated with who were usually the people that didn't want to have any relief. They'd work for somethin' to eat almost, rather than go on the relief roll. That's

the kind of people that I'm talkin' about. And I guess that I was imbued with the private-free enterprise systems so thoroughly that a lot of things that happened went against the grain.

For instance when the price of copper started to go up where we could make a little bit of money at the Bristol mine, why Mr. Roosevelt came out and made an announcement that the price was too high, and immediately the market dropped from about seventeen cents to twelve cents [laughs]. I don't know what the date was, but the Taylor Grazing Act, I guess was passed along about that time—sometime in the '30s. of course, the very idea that the public domain in Nevada would be under control was, in my view, just Nevada's problem. Taylor grazing went against the grain as far as I was concerned. It's true I saw the evidence of improper—well, I don't like to call it improper—saw the evidence of the human occupancy of the area having spoiled some things. For instance, I know that over in Delamar Valley, some of our friends from Panaca, old timers, older men at that



time—early '30s, mid '30s—Dave Mathews for instance, used to say that in his youth you could drive across Delamar Flat, and the grass was there, native grass, up to a horse's belly. And by the time we were operating, struggling along at the Comet mine, and goin' down to the Cottontail Knoll to shoot a cottontail, that valley was denuded. And there had been a vast change. Apparently evolution went from the grass being eaten off and killed by sheep, to sagebrush taking over, and then the sagebrush finally being partly killed off to where most of the bushes were up on mounds of dirt. And the wind blew away the soil from around remaining sage and now today, that whole valley is a cloud of dust every time there's a wind. And there's no way that it'll ever come back to being what it was, you know, what Dave Mathews talked about.

This and other things made me very much on the side of the cattlemen for the use of the range, versus the sheepmen, who with the sheep's hoof would kill off—if you overgraze with sheep, the sharp hoofs kill off the roots and destroy the foliage. Now this is my opinion, see. I'm not saying—I'm not any expert on that kind of thing at all. But, nevertheless, this same thread of thought has gone through my mind a number of times, and even up until the 1950s, I've been observing things. From a recent land development I've been in, I have an idea that the whole state exhibits evidence of destruction of the ground cover that earlier was responsible for streams flowing the year round. In certain places where there were streams flowing all year round, denudation came to the point where the precipitation runs off fast, in the times when the snows are melting, run-off goes down to the bottom of the valley, and flows out in the mud flats and evaporates, and it doesn't even get in the ground water system. I think this whole state has a tremendous

amount of water that gets evaporated, rather than getting into the ground water, where much more of it used to get into the ground water. Precipitation on limestone areas, does get into the ground water system because our massive limestones are porous enough to absorb the rain and melting snow, so that part gets into the ground water system. I maybe didn't state that just right. If you have limestone mountains (it's been my experience and the Bristol underground experience proved it), when snows come and they go to melt, water soaks right into the ground and there never was a stream there, because only a flash flood could cause runoff. When you go into the volcanic or siliceous, shaley mountain ranges, then this is where vegetation retards runoff. If you don't have retarding of the melt, to hold the water back and let it seep slowly into the cracks and later come out in springs and so on, then of course, the runoff comes rapidly and you don't really get it into the ground water system. There's ways of regenerating stream flow, and I've had a little fun doing that in more recent years. But let's get off of that subject now. That's enough. Let's get back to mining!

In the 1930s, I think maybe I mentioned before, we always had at Bristol, and earlier at the Prince and around, always a rustling crew. If you needed more men, you could pick 'em up, and usually you got them from the farm communities over in southern Utah. And there was always somebody on your payroll—if he saw that there was an opportunity for another man, why he had a friend or a relative or somebody that'd be over there right quick to pick up the job. And so there was a reservoir of people that were doing, well, living on more meager income around the farms and probably eating what they raised themselves, and things like that. It was a reservoir of workmen, of very good

workmen, that were energetic and wanted the work. And there was no problem in that period of men coming to you and gangin' up together to force you to pay 'em more or to make work that shouldn't be made by reducing each task to "specialty" work.

In other words, it was easy, if you got a man trained as a miner or as a mechanic or anything of that kind—he'd do multiple jobs without any thought of complaint, you know. Well this day has gradually disappeared; and people regard themselves more and more and more as specialists, you know. We had a whole society of generalists. Even a fella that never even got through grammar school, if he was an adult, why he figured he could do anything, and he'd tackle anything. We haven't got that kind of feeling any more, because the people have been educated (and I think wrongfully) that they should go farther and farther and farther into school, or else they'll wind up never having a job. And we've seen the politicians lay this on the line so prominently that to many the can-do attitude is dampened.

Yet, I know business people, and there's some of them right here in Reno Rotary Club that have been very, very successful—you know, my age or older that didn't even get through grammar school. But it didn't stop them. They were used to goin' to work as a child. And there again, I say that in those days there was no question about kids being raised, especially on a farm, where they went to work. They had their duties, you know, from the first time that they could be productive. And it didn't hurt 'em. It made 'em good. It made good people out of 'em. And then we've come along through the evolution of our society to the point where, you know, we have child labor laws that get more and more restrictive. It came from a part of the country and the earlier industrial revolution, where there was child labor used in sweat shops. Undoubtedly

it was true, and there were laws that became passed to correct that.

I'm reminded of the problems of mining, and the problems to the entire mining industry, generated through the coal mining in Appalachia today. That, the bad that has happened in Appalachia reflects on the whole mining industry, to the point where Congress is encouraged to pass laws that are impossible laws—laws that put burdens on the mining industry that shouldn't be there. I mean for instance, the idea that they should pass a law that says you can't—and we have it in our environmental law now that was upheld by the courts—saying you're not supposed to do anything that would pollute the atmosphere. You're supposed to keep it at least as clean as it's been. It's a non-degradation law that, if enforced, makes it impossible to talk about going out here in the country somewhere and starting up a property—I don't care what you're doing, little will be accomplished where you don't do anything to the atmosphere. Even people do it. People themselves are our biggest polluters. And so non-degradation is not a realistic objective.

In that connection, I remember recently we had a panel discussion for the students up the University, and the environmental staff man, [Dick] Serdoz, was on the panel and something came up about particulate pollution; and he made the remarkable statement in answer to a student question that there are particulates generated, that are so fine that they *never* settle. And that simply isn't true. Even large molecules get settled out. And in fact, tiny specks of silver iodide are used to cause precipitation of water in the atmosphere, and cause rain. And nature has been putting particles just as fine as they can be produced, into the atmosphere from the beginning of time, indisputable. So this is the kind of extreme view that slips into thinking.

And I don't question—I think Mr. Serdoz was honest, and he believed it. But he was then new in the job and learning [laughs] you know. And I didn't say anything in rebuttal to that, because it was just a small class of students. It wasn't gonna change society to show disagreement, you know.

But, I see so much of this, that it has me extremely disturbed to think that at the same time we're in an economic squeeze today (and here we were leaving the '30s), but we're in an economic squeeze today, and after the trail that grew up under, and the experience of the '30s, and seeing that it was really the local government that was always what governed with cooperation that time, and we've more and more exported our problems to Washington expecting that whatever problem you have, you can get after your congressman or your senator and get the answer, and they'll come back and fix it for you. And we've got to get away from that, because it's just not in the nature of things that that kind of thing is gonna bring the solutions. You've got to get it closer to home.

And getting into the mining, actual mine operation end of the thing—we had our mine inspector who was an elected official—we were all very much in favor of that, because as an elected official the mine inspector really had to be acceptable to both the laboring crew and the operators. He had to be somewhat of a politician. He had to be real firm in enforcing regulations dealing with management or labor. And we were very fortunate in Nevada, all through the years in having a man that really took hold, and made the office work. Well, the first loss in that area that we suffered was when through, I think mainly, the labor union movement, and again, let's not forget the coal mines and the Appalachian situation with their influence on public thought.

Through all of that, the union movement was insistent on getting more power (and they have grown tremendously in power), and they have caused Congress to decide that the federal law should be written to improve mine safety, and have more inspections, and so forth. Well, inspections don't make mine safety. Mine safety is made by the workmen, especially underground. And I'm talkin' about metal mining now. There are things undoubtedly in coal mining, such as dust that causes these disastrous explosions and all that. There's something there that wasn't a factor in any of my experience.

But, at any rate, the vast majority of accidents in metal mining, are the underground mining things that are really under the control of the man at the face, more than anything else, and the bosses; the shift boss, the supervisors can do much for safety 'cause they're there every day, whereas an inspector from, whether it's the state level or the federal level, does well to get there now and then. And there'll never be a time in an underground, complicated underground mine employing a number of men, when a person couldn't go through and find violations, any day of the week almost. There's a board sticking over there with a nail in it, or there's a rock that should have been barred down and something else somewhere. And if he wants to, the inspector goes through your mine looking for either minor infractions or gives truly helpful hints.

So it was, generally speaking, in the accidents that I've been familiar with; these accidents were more a function of having a hazardous industry. It isn't like sittin' behind a desk—you are going into a hazardous industry the same as you go into hazard when you go skiing. Or if you have a desire to do it and jump out of a parachute for the fun of

it or sky dive, why you're takin' a chance, but you're doing it on your own volition. And it's always been my thought that any man must choose his own risks. In the days when there were a lot of people that had to find almost any kind of a job to go to work, there was simply the choice of risk factor there. And especially today, if a person plans to work in a mine, he should decide not to if he doesn't want to engage in somethin' that's more risky. And to the extent that occasionally a miner drills into a missed hole and gets blasted, or to the extent a falling rock gets him even though he's been careful and barred down. (Usually it doesn't. If he's been careful and barred down, he's not the man that gets hurt. It's the guy that won't even bar down, and he'll look up at a slab, and walk under it anyway and dare it to come down. I've seen those people.)

So, I think that the public is lead astray, in a way, when the news comes out that there's been a mine accident. You know the public soon forgets an airplane accident. A hundred people are killed in a plane accident, and in the matter of a day or two why the public doesn't think any more about it. But let it be a mine accident of some kind—like recently we had that horrible fire up at the Sunshine mine [Idaho]—well Lord, that's pointed to, and there was a great stew made over it for a great length of time. Rightfully, in regard, of course, to the people that are trying to research why it happened, and what could be done to prevent another situation like that and so forth. But what I'm talkin' about is just the fact that the public has a horrible thought of anybody that goes underground [laughs] you know. That's the public. But what about the man that does it and wants to do it, see. And this is the difference. I went into the business, and went underground day after day all through the mine, in underground

mining. Had close calls on havin' accidents, myself. And I saw a lot of 'em that were close calls beside some that were fatals. So there's a difference in that way.

Then society, your relationship to the people around you, there's been, of course, quite a change in that. In one sense we had a segregation of what I'd call the upper level of society versus the lower level and I'm not talkin' about dollars. I would put some of the most wealthy families (in the kind of classification I'm talkin' about) along with some of the poorer people that had no chance of getting anywhere. I think the backbone of society in this country was among the middle class (so-called); the people that regarded their religion as a very important part of their life; people who held themselves above the rank and file of people around them; and as Mr. Hoover liked to put it, "Be an *uncommon* man." Don't do horrible things because you see the other person do it, and say well that gives you license to do it. Freedom has to come from inside each person, each and every person. And the only way that you can achieve freedom is through self-discipline. (This has always been my feeling about it.) And freedom isn't license. Freedom is the right to govern yourself, so that you won't have to be governed by somebody else. And if you succeed in governing yourself, controlling your animal instincts, and placing yourself on a higher plane than the people around you (most of the people around you), and always searching for the guy that's a little better than you are and want to associate with him—that's, I think, the way you achieve self-satisfaction and success with your own life. And that's not money, it's a way of thinking and acting.

We saw a lot of that in the '30s, and I don't think I've seen as much of it—that kind of

thinking—as time went on. I think that we see more and more social leveling. Even our government has adopted a program that says, “mix society up, turn it upside down, get ‘em all doin’ the same thing!” You know, pass laws that give people the right to do these crazy things and everything, and don’t allow somebody to have a higher thought of himself because of his personal view of himself. It is not right. I mean the law seems to more and more point that way. And I don’t believe in it. I didn’t believe in it [laughs] and they haven’t convinced me yet [laughs]. So I don’t know. Does that kinda tell you how and where I think we maybe lost something? You know, you talk about the good old days. Well, the good old days, usually when they’re referred to, people say, well they weren’t so good, and they start tellin’ you how we’ve lived on a higher and higher plane of affluence—no question about that.

Economically, we have come great strides forward; you know as far as the material things that you have around here, and the ease with which you can have ‘em—if you don’t watch what the other fella has and get jealous because you don’t have quite as much—why, sure society has come a long way with having more material things. But there’s the other side. And it’s the other side that I’m talkin’ about where I think we’ve got to turn things around a little more, and get more people trying to be unusual people, not just more of the same. And the kids, as they come up, are at a great disadvantage because they aren’t put to work, when they’re young, with solid duties that mean something to the family and so on.

Well, I think maybe I haven’t said enough about the mine operation and some of the things that were learned, not just at Bristol but before that. You know, I’d done a little bit of leasing and tested the self-employment feeling. But out of this experience and seeing

men that had no background at all, no training in mining or anything of the kind, come to the mine there, and in a very short time become good enough to, say, want a lease in the old part of the mine, someplace that the company had operated and didn’t pay to mine any more. And so the first thing you know, we built up a crew of leasers, we called them; and we had a system of split-check leasing at Bristol, that was quite successful there for a period of time, between 1935 and ‘39, along there you know. Where they’d be given blocks of ground, and the company would furnish—I probably mentioned this before, but—the company furnished power, air, and a machine drill, and the blacksmith would sharpen the tools, and so forth. Bristol required less sharpening and less problem that way than most, because in limestone the ore was usually soft and easy to drill.

Well anyway, they would—oh, on the average they’d get say half of the net smelter returns. And at that time we had the tramway running which conveyed ore over the mountain and down to the Jackrabbit side. And we had the narrow gauge railroad running from Jackrabbit to Pioche. And later, after the Prince line got activated by the Union Pacific—we put an unloading station in at what we called the Atlanta station, along the railroad, and cut out the last part of the narrow-gauge railroad. So the system was that each leaser would produce at least a carload for a shipment, and get it into his ore shoots or his pockets or someplace. And then the skip tender would hoist his shipment, and it would be kept separate, in separate bins.

Most leasers kept their ore clean in the stope, but some of ‘em would mine lower grade ore at a higher rate and still make good money, and they would maybe want to use the ore sorter over the tram bin. So their ore would be hoisted and trammed over to the



train bin, and as it was trammed in a one-ton car and dumped onto the sorter, why one partner in the lease would be there at the ore sorter, sorting waste from ore as it dropped into the tram bin. And Company ore was always sorted because, as was pretty clear, the miner if it wasn't his own ore why he wasn't so particular about keepin' it clean. And so company ore always had to be sorted, and you had to have a hired man on the ore sorter, sorting the waste out. Well, then the tram would start up. Maybe there'd be three or four bins there that'd be full; and some of 'em would be company ore and some of 'em lease ore, but it would all be kept separate. It'd be sent over to the Jackrabbit side, and put in separate bins there, and loaded into the narrow gauge railroad cars. And the railroad would haul about two hundred and forty tons at a time. And most of the time, Bill Adair was in charge of the railroad. And later on when Mont Epperson left as the tram man, why Bill Adair took over both tram maintenance and railroad operation. Clesson Buehler, another relative of the Buehler family, was usually with him as an assistant. And they'd repair everything, and then steam up the old locomotive, and take a trip to town.

I remember one winter when we had some heavy snows. (They weren't heavier than usual necessarily; weren't heavier than several other winters, but we had a lot of wind and drifting.) And all of the railroad cuts from Jackrabbit into Pioche were filled up with snow. Even though on the ridges, why, the snow would be blown off largely, but it'd be filling the cuts in the railroad. So we came to the time we were storing ore in every place we could find in the mine, because we couldn't produce; they couldn't get the train over the railroad. And so finally they got ahold of a large snowplow from the Highway Department, and mounted it on a loaded ore car ahead of the locomotive.

And Bill Adair steamed up the old locomotive, and all of us were over there to help out. We had a crew from the mine. And we went over to see if we could break a trail through to Pioche. And Bill would back up the engine and give it all the steam, and plow into one of these railroad cuts. And usually he might go a third of the way, or halfway through it, and then the old thing would stall. Then you'd spend hours, muckin' out so he could back out again. And then he'd give it another ram. Well, in the course of that day, or maybe it took two or three days, we did get the railroad finally cleared to town. And after, I think, about a month of not being able to ship, or maybe it was six weeks, and having everything full, why then we got everything shipped. [Laughs]

And I remember in the mine that there were several places, you know, the chutes in the mine—everything had backed up. You couldn't hoist any more or anything, so we'd have to move men around to showings of ore and hope that it would work out. And I recall that during that time we found two small ore stopes that probably wouldn't have been found otherwise. We just had to work where streaks of ore were. And it was quite an experience. But later on, after my time at Bristol, the whole process got changed. The tramway was discontinued and the railroad abandoned for trucking right from the mine to the Pioche depot.

Well, this basic principle of the miner being in charge of his own economic take, with how well he did right there at the face—(the leaser, in other words, under the split check leasing system) was—I guess it was a natural plan that came with having done a little leasing myself, while economic results provided a good education in motivation, that was valuable to apply in other ways later on in other operations. And the motivation and incentive that is provided by giving the



man his territory relates certainly to the territorial instinct of the animal kingdom. And it also relates to the status instinct of the animal kingdom. And it's not all in the human animal; it's in lots of animals.

But it was a very valuable experience. It did show, and in other experiences has shown, that you can expect at least double the productiveness out of a person that is in charge of his own affairs. Because it isn't all a matter of just sheer physical effort. That isn't it at all. It's a matter of the way your mind works. And I think that I have the same instinct as everybody else; and I think that you can read it in yourself, if you turn around and look at yourself. Everybody can see that—it could be largely in doing what you like to do versus doin' somethin' you don't like to do. It doesn't all apply to dollars and cents, you know. So it's a very important thing to understand, and I don't think that educators do understand very much—scientifically understand—very much about the total number of instincts and drives that enter into the operation of individuals and society. And I think it's a study that has been long neglected. We'll talk some more about that another time.

Now, still staying with the '30s, I think the local government has the best chance—and at the time we're talkin' about, in the '30s, of course it was a tremendous incentive to anyone in a day, in a time when jobs were scarce, and they'd go after almost any kind of a job; that's why there was a tremendous incentive to get on a government payroll. And then there was the incentive to do pretty good work once you're on there, to keep the job, you know. And I think that a lot of that has been lost. Naturally, there would be less incentive to doing your best, I think, when there're jobs any old way you want to turn [laughs]. Good or bad, I don't know. But I think that the best chance rests with local government for this

country to get our personal drives working for the benefit of society as a whole. I don't think it's at the national level. And I don't know how we're gonna turn this around to get the local level more and more responsible, when the bureaucracies have the incentive to grow bigger all the time, built into the way the system works. And of course, I'm not the only one to say that. I guess you get it from almost anybody that supervised people through that period [laughs]. Isn't that right?

I had some contacts with some of these local governmental people who were interested in mining. How did I get along with them in these instances? Got along just fine. For instance, well Art Bernard, for instance, was a miner in Pioche. And Art worked for a short while out at Bristol as a shift boss for me, and was a very good man. He was pretty independent. I mean I'd make the rounds to where Art had somebody workin' and he would start a drift off in some direction that I didn't know anything about sometimes [laughs]. But, I mean it was always constructive. And later on he became a deputy mine inspector. This went into the '40s. When we were working at the Prince, he came around and gave us a firm deadline on getting the second exit (safety manway) up from the eight hundred-level. And we planned where we'd do it, and told him. And he was around regularly to see how that was progressing.

And Bob Wilkin (presently a local contractor in Lincoln County) had been a shift boss up at Combined Metals; and he came down at the Prince and drove that raise for us from the eight hundred-level up to the five [hundred]; put a hole through for secondary exit. And so going back of that, we had, oh, I've forgotten just when different mine inspectors were in, but we had a system of course, where any of these leasers, these split-check leasers at Bristol were not on a

payroll so they were independent operators; they could do things that the company couldn't do. For instance a raise in the Bristol mine, say if we wanted to drive a high raise, why, according to the rule book, you had to have timber up within a certain feet of the back of the raise to maintain a manway and ladders timbered off from broken rock in the chute. Well, in at least two or three cases, we had an objective of driving high raises for holing through from a lower level to a level or stope above. One case was a raise from the fifteen hundred-level up to the twelve [hundred] eighty in Bristol. We drove the raise, oh, I'd think about sixty-feet, timbered off. And this gave us pretty good muck capacity there. And then from there on, in order to avoid the expense of timbering (but not only the expense of timbering, also the expense of the payroll that we would have to put out to drive the raise on through), why, we let a lease to Narducio Domenici. And that became known as the Domenici lease. And it was a very, very successful lease, because this raise was headed into an area where there was a showing of ore. It wasn't any certainty, but it looked like a prime bet, and so we were anxious to get it through.

Well, Narducio started driving this raise from the sixty-foot height on up to the twelve [hundred] eighty level, which meant, oh from, let's see—two hundred twentyfeet less sixty would be one [hundred] sixty, wouldn't it? One hundred sixty-foot advance driven without any timber, that is without timbering at all. He carried a threequarter inch cable up with him. And he'd have a stull—the raise was slightly less than vertical, perhaps seventy-five degrees or eighty—and he'd have a stull that he'd take up for each round, of advance and he'd put it right down next to the footwall side of the raise, next to the lower edge of the raise. And he had a way

of tying his stoper underneath that timber for protection from the blast. For access you just had to climb this three-quarter inch cable that was always wet and mucky from drill sludge when visiting for measure-up. And I had to go up there regularly to keep him on line with my Brunton, and inspect the mineralization he was goin' through. The dead-end raise was gassy, served only by compressed air for ventilation. Domenici would carry a sack of onions to eat when threatened with powder headache; claimed chewing onion was a specific remedy. And he got into some ore, even on the way up there. And finally we broke the hole through. And from there on he mined for a long, long time. He had a number of partners, and the Domenici stopes became a major portion of our production— very good silver ore with good copper content.

Well, the reason I cited this is that, you see, this idea that an independent could do what he wanted to, and the state Inspector's rule book didn't say they were gonna control him. And at that time I guess most would have thought regulating the leaser would be just as far out as government sayin' you gotta wear certain protective devices if you're gonna go skiing see [laughs]. Yeah, that was the attitude. And if you wanted to risk your neck, why, you know, it was up to you as an independent contractor.

You might say, "Well, what about the mine safety angle on that kind of a deal?" Well, peculiarly we had, during that period that I was in charge at Bristol, we had some bad accidents. And I think I mentioned some of those. But those accidents in every case would have happened regardless of whether or not the independent leaser had come under mine inspector authority in the rule book. And as far as anybody could anticipate, the rule book was being followed, you know.

If you pass a law that you're not supposed to drill into a missed hole, that doesn't stop you from drillin' into a missed hole, if you don't think [laughs] there's a hole to drill into see. So there's certainly a limit to what the rule book can do for you. One of the leasers was working in a place where the back was dribblin' a little bit, every once in a while, and he just would look up at it and not even get out of the way, and he got caved on.

[One of the things you noted in reading these reports of the mine inspectors was that there were a lot of complaints about dry drilling, and orders that this had to be changed.]

Well at the time that I went to the Bristol, things were just being converted out at Bristol on this wet versus dry drilling. And of course Bristol was a mine that probably had very little to do with ever giving anybody silicosis, because it was in a high purity limestone. The dust that was most damaging at Bristol would have been whenever they drilled into high grade copper ore that had arsenic in it. And I do believe that one man, a leaser, met his Maker on account of the dust from that oxidized copper ore. It wasn't—I don't think it was considered an industrial accident even. It wasn't that kind of a thing. He just became sick, and I do not know whether the arsenic-copper drilling was proven to be the cause.

Let's see. There was another case where a young fella, real husky, young fella from over in Utah, had a tram job; was tramming out of the May Day tunnel where there was a big draft, an updraft (because it was connected with the surface through the Tempest and the Hillside mines) and there was a strong draft through there. And in the cool weather, this long tram from those chutes that were connected back out to the surface—the draft was pretty cold, and the fella pushing a car

in, was workin' pretty hard, and then he'd ride the car out downgrade most of the way. And he'd get warmed up and cooled way down and he caught pneumonia. And Mrs. Gemmill had a part in tryin' to help him out after he got sick you know. But he died very quickly. And at that high altitude, seven thousand feet, you know, and everything, why there just wasn't—they didn't have these modern miracle drugs or anything, and that killed him. But it was pneumonia that killed him. Now I don't recall whether that got classified for industrial compensation either.

But, as I say, the dry drilling at Bristol probably wasn't the hazard that it had been at other properties where there was a silicious type of rock. For instance, in Lincoln County, the Delamar mine was the famous, world-wide example of men just working very brief periods of time in the dry quartzite dust, and developing silicosis, and dying very quickly. And an awful lot of 'em. (Major production of Delamar was in 1892 to 1908.)

Then I went to Bristol in '35. And the Bristol mine, after the depression closure; had just gotten started up again, I don't know, for a year or so prior to my arrival. And we had dry machines at that time, jackhammers. We had dry jackhammers, but we had spray nozzles that fit on to the side of the machine, and you direct the spray into the hole [laughs] while you were drilling. And it worked pretty good. And for the amount of dust we got out of the hole that didn't get sprayed, and especially in limestone. I'm sure that we really didn't have much to worry about. And as a little time went on, we bought modern machines that had the water needles that inject water into the hollow steel and pressure water tanks or water lines were provided all around the mine. Usually it was with a pressure tank, not with pipelines leading into the different areas. But the miners would have to have a pressure tank, and pack

some water in to fill the pressure tank, and drill with water.

So water use soon became the standard drilling procedure, except for one thing. For at least a couple of years there, we had “Lop-eared” Jim and Tony Argento [laughs], who were pretty good single jackers. And they could go into a remote stope, you know, where there wasn’t even any air, and where there was some small showing of ore—and usually on Company account. They were, both of ’em were irregular in their work periods, because they’d work a certain length of time, then they’d have to go on a bender. And so when they came back, you knew that you could make money with them, because they knew the ore. And they’d work just about the same as if they were leasing, ’cause they’d start punishing themselves, you know. They’d work harder because they’d spent all [laughs] their money. And so we used them in that way sometimes, and put ’em in a remote area. Well singlejacking in that moist ore you know, there wasn’t any dust problem really, and so water wasn’t a problem. [Laughs]

I guess we’ve pretty well covered the period of the ‘30s. You could go on. I’ve probably given you a little more than necessary of the philosophy of the ‘30s, but you probably get it from everybody that you talk to.

Well, the government moved in. It was accelerated undoubtedly by that depression. And the depression (and I’ll swear that I believe it) was lengthened greatly by Mr. Roosevelt, though pro and con argument will continue ad-infinitum. And I’ll never forget one of the older ladies that we knew and had great respect for—one of the prominent ladies of Pioche—that was visiting at our house at the Prince mine (this was of course, later, because it was after we had moved into the Prince; it had to be in the early ‘40s). But anyway, she was there with some other ladies

at a bridge party, my wife was putting on. And I came home to lunch, and something was said about Mr. Roosevelt. I made some derogatory comment about Mr. Roosevelt. And this lady spoke up very indignantly, and said, (it’s hard to believe this, but she did and a very nice lady too), spoke up and said, “Well next to God, Mr. Roosevelt is the greatest man that ever lived, and I just don’t want to hear any more comments like that.” You know [laughs]. Oh, next to Christ, I think she said, next to Christ, Mr. Roosevelt is the et cetera, et cetera.

But her family were mostly Republicans, you know. (And there must have been an awful friction in that family over that [laughs].) Well, they weren’t all Republicans, no, because there were very few Republicans in the county. But what I mean is that they were conservatives, not believing in a lot of these things that were done, you know. And that was really the start of this big government, wasn’t it? It certainly generated over that and over the depression. And mind you, it wasn’t very many years after the ‘30s that we came up with the 1946 Full Employment Act, which simply says, that regardless of economics or anything, that if they’re unemployed over some level or other, you’re gonna have the government step in and employ.

Of course, the employment that was instituted in the ‘30s should be mentioned—the CCC camps and these things. And we had a good-sized CCC camp out near the Delmue’s ranch. Now about some of the fellas that went to that CCC camp. They were put to work on more or less make-work things. They would go out on the range putting in little dams that usually got washed out and didn’t do any good you know—in the gullies; and things of that kind. But they were work crews. And some of the fellas from those camps were really hungry when they went into them and

came out really sayin' pretty good things about having been with this CCC program. I know that we had a couple of men at Caselton later that had gone through that, and they'd seen things get pretty hungry, and they turned out to be awfully good people. So it wasn't all bad.

The question that's always been uppermost in my mind about that kind of an operation—make-work thing—is that we surely have far, far more opportunities than to go out and rake leaves or build little structures that don't mean anything. To put that kind of work to beneficial use and to productive use, and not only productive use, but why, in a case like that, can't work be generated in the private sector that government pays for all right, but as a capital expenditure? Why do we have to have it as, you know, a cost of government? Isn't there a way that we can—?. Well for instance, there's a project that's a dream that I've thought of for many years, and that is a realistic thing: the importation of water to the great desert areas, including Nevada; importation of water from up north, you know, down through this area—or diversion of water from one section of the country to another. I don't think it would be productive for the government to go hiring government employees to go do it, but I think that under our private enterprise system—I've heard some people say we don't have free enterprise any more, but we gotta fight like hell to keep private enterprise, not free enterprise.

Well, this business of how you employ the unemployed, I think if it's a pork-barrel deal, where you distribute this around to different localities or different places, 'cause Congressman X or Senator Y is entitled to a certain amount, and it doesn't matter how he spends it, but you apportion it around for that reason, that doesn't really make too much sense to me. But the idea of the government sponsoring projects that are so long range

that private industry has no reason for doin' it, in other words it's too long range to come out as an industrial enterprise for near term profit making, but still to have great economic benefit. And we look back to the Hoover Dam as just such a thing, and how it was done, see? Well, I don't think that that entered in as a debit in the federal budget, you know. I think it was a capital investment.

Now why, if we're gonna have the Full Employment Act, why shouldn't we have an act that is companion to it as to what—there's a why, now why not have a what, what we do with it. You see, this old idea of incentive enters into all of these things, and I'm lookin' at a map on the wall [gesture] over there; the checkerboard pattern across the state of Nevada. At one time our government leaders decided that a railroad was important enough to give the captains of industry a lot of land to raise money to build a railroad. And they gave this checkerboard pattern to the railroads. And of course, anything like that would certainly be frowned on today [chuckles], wouldn't be possible. But outside of mixing up so-called public lands with private land (which at that time was not considered bad because it was anticipated at that time that all land would become private land so it was only a matter of tryin' to find somebody that would pay somethin' for it or would use it and they'd make it private land. They'd practically give it to somebody that would use it see; that was the theory. So the checkerboard pattern didn't hurt under that plan of disposition.

And this, placed the disposed land on the tax rolls of the counties. Notice the counties of Nevada were largely divided up, and if you looked at the old railroad pattern, you'd find that the county pattern was created to take advantage of having some railroads in each county. And the evolution of the county boundaries went that way so that they'd have



taxing power over some railroad land. And in Lincoln County, I know that for years (I watched that down there), the county would've been broke, and real flat broke for many years if it wasn't for the Union Pacific railroad running through a lot of the county, and the big taxes that the Union Pacific railroad paid. And this, a long time ago, brought the thought to me and we should've had a look at how we raise tax money. And I think it's even more true today.

People seem to lose sight of the fact that the railroad rates, freight rates, are a function of railroad costs. To loosen up transportation, would be a tremendous boon to this wide-open country. And of course being in mining and shipping raw rock and ore at great distance, I've seen a terrific escalation in transportation costs. And I've seen the very complicated way they have determining freight rates that is just hopelessly complicated and non competitive.

Getting back to the tax situation, in my view this country would be much better off to take all taxes of f of all railroads property, railroad property that has anything to do with transportation. Now if it's railroad property that is producing oil like Union Pacific's oil well property, then that's somethin' else. But I think that the taxes we have on our railroads has gone so far that it's produced an incentive in the trucking industry to compete with the railroads for transcontinental freight, and believe me, there's a terrific amount of that going on. And look how ridiculous it is. On a railroad, as far as the actual cost of running the equipment (exclude the taxes and exclude government imposed red tape), you can run that railroad and transport tonnage for between a cent and two cents a ton mile or somethin' like that. (I don't know. I think it's closer to a penny a ton-mile on a major railroad.) And there isn't any way that the

trucks can transport tonnage for, well, maybe five cents a ton-mile or something; and you've also added a lot of cost to the maintenance of highways, due to the favored trucking and everything.

Now, I'm not currently (and especially in this job), I'm not saying anything against the trucking industry. They're our pals, you know, because we depend on the trucking industry for supplies and for getting rock to the railroad or wherever it has to go. But I see heavy machinery and things that originate right here in the Reno area you know, and from Las Vegas that gets shipped clear across the United States in competition with the railroad. And this just doesn't make any sense.

Now, I don't know that much about traffic and how they determine railroad freights and all this, but I'll just betcha that if we were to shift the taxes that the railroads pay, over to—well, put it on fuel! Put it on energy! You know, if we got that kind of a problem, shift the taxes to where it does the right thing. But, you can't do it because again there's the lobbyist, there's the political pressure, and there's the habit that the country's gotten into; and these habits get ingrained and they're permanent, unless some great thing happens to change it [laughs]. Well, I think that a lot of people would agree with me on that. But immediately—supposing you could do it overnight? Wouldn't there be a lotta truckers go broke though? My gosh. And wouldn't the teamsters howl? [Laughs] Well, I don't know how real revolutionary things like that will ever come about, but I don't think we're makin' progress with those things.

And you know in the '30s we had a railroad freight rate from Pioche to smelters in Salt Lake—we shipped to the Tooele smelter at that time. All the Bristol ore went to the Tooele smelter—and I remember that we had an escalated rate from a dollar forty, I think was the low rate—a dollar twenty or a dollar



forty per ton—for ore under five dollars net smelter return, and then escalated on up to two and a half, for higher grade ores. And naturally, as time went on, the mine costs—wages at that time were four dollars a day, started out at four dollars a day and drifted up to five. Well, the four dollars per day has been escalated into an hourly rate now, you know. As those rates changed, I never saw any change, any readjustment of the railroad freight rates; because your ore grade had to be a lot higher to pay the wages, and it had to be a lot higher to pay all the other costs of mining, but that simply kept puttin' you into a higher and higher bracket on freight, so that these lower brackets didn't mean anything any more, see. And so maybe the ore shipment costs and evolution of those costs is the reason that this railroad thing stands out so glaringly to me (because I suppose some people don't see it as that important). But I think some of the railroads were pulled out, that used to be around in Nevada, because of the property tax. There've certainly been mills torn down because of the tax.

You know, for instance, the Wah-Chang Company built a mill out at Tempiute, and ran it for a period of time, and when the government tungsten purchase program terminated, immediately they liquidated the whole plant, tore down the powerline that ran out there, and now, a few short years later, Union Carbide is back in and gonna have to rebuild the mill and build that powerline all over. Now, if there were some way where they could have written off their investment, and left the powerline there. (The mill is different, because you know, you'd have to have somebody there watching it, and maybe they would have figured that it wasn't worth doing that.) But the powerline would've been used, because the Sand Springs Valley—Penoyer Valley—was opened up for desert entries; and

the big thing that held it back was the high cost of pumpin' water. But with the power out there it would've been saved, I presume, if they could've just written the line cost off without havin' to destroy it. So a lot of things like that do happen. They bother you when you think about 'em. [Laughs] Again, we've gotten out of the '30s. don't know what—.

I think that in the '30s, we had a very strong community spirit, because everybody sort of regarded themselves in the same boat, you know. And sure, you'd associate with people that hadn't come over the same kind of a trail you had, and had different standards, altogether different standards. You'd put up with their crazy ways, but you didn't get in bed with 'em, you know [laughs]. And you, everybody regarded the rough, tough miner—you can call 'em rough and tough if you want to—with a great degree of respect for what he was and what he could do, you know. Heck, it was quite an education, I think, in human nature, to get acquainted with a cross-section of people like that.

What'd I do for fun? Fun was easy. Well, I know I mentioned some of the miners would just go out on a bender. Well, obviously that isn't what everybody was doing. There's a tendency, I guess, to think that most of the miners were wantin' to do that. But, really most of the people that were working in the Bristol mine, for instance, were serious. They were there to earn money for their family, even if the family wasn't there. And maybe their family's over in Utah, and they were there to accumulate a stake, even if they were leasing. And they were serious about it. And when the time came where they could take some time off, they'd probably go back home; or some of 'em, of course, lived in camp and had their family in a cabin. Most of the single people stayed in bunkhouses, but we had a few cabins, and some of the families lived in them.

But in the bunkhouses there would be, say, half of the people in bunkhouses were married and had their family back home. And there really wasn't, in that period, an awful lot of, you know, this business of fighting and having brawls in the town of Pioche. It wasn't too bad.

But, we saw a period later, during the war years, when the Army took the cream of young fellas, and even had let some out for the mines to operate. And you had a crew working, a crew on the road going, and a crew on the road comin' [laughs]. We saw a lot of rough business goin' on, on the streets of Pioche on weekends, and Saturday night especially. There'd be a dance or somethin'. No, I think during the '30s there wasn't much roughness.

People were inclined—if you wanted to have a community party it was easy. Everybody would attend, and you'd get a tub full of weenies, and boil 'em I guess, and buns and go have a ballgame. It was somethin' like that see. And pitch one side against the other. Maybe the gals against the boys sometimes [laughs], in a softball game. And you'd have, oh, some of 'em liked to play cards. Oh, I remember before I was married, we usually had card parties in the boardinghouse. Of course, the Pioche Theater was going all that time. And you'd go in to see a show every once in a while. And they had dances. Entertainment wasn't very much of a problem.

[Wasn't there a famous line at Pioche?] Oh, yes. There was, but I think that was wiped out prior to that time. I think it burned down or something. That doesn't mean that there wasn't some of that goin' on, you know, just around town. You know, there were the rough gals.

And during the Prohibition—. Well, you see prior to that [1933] there was plenty of liquor available. Judge Nores with his Pioche drugstore. And the doctor—.

(What was his name, prior to Hastings? Doc McCall I believe.) Anyway, he'd write these prescriptions for plenty of alcohol for the drugstore, and the drugstore'd get it in five-gallon cans, and mix it with soft drinks, and make "Pioche Specials." [Laughs] And nobody had any trouble getting inebriated, you know, during that time. But, then of course, the thing opened up to free distribution of liquor, and then we had, I think, five, was it five bars? Let me see. Gus Messaloids, John Valente, Mezzano's, Ernie's, Silver Club [bars], and, oh I can't think of all the names, but anyway—. There were five, I think, different bars in town that served liquor. And I don't know that they made very much money doin' it, but I guess they made a living. And they were especially prosperous, of course, later on when all the mines got going good and strong. That would've been in '42, and after, you know.

I remember out at the Comet mine we had an old timer, Johnny Crow, who had lived out there in the area for some time, as a prospector. He knew how to make blackberry brandy. And he had a barrel under a tree, buried. He'd get us to buy cans of blackberries and sugar for him, you know. I don't know what all you start it with. Anyway, he'd make this up, and finally it'd get ready. It seemed to be awfully mild when you'd drink it, but boy, it had a wallop [laughs]!

And then another one. Reed Hall was living over at the Pan-American, with his wife. (She was a very good cook by the way.) And he thought he knew how to make beer. So, we got the stuff for him to do that. And he had it under the mill floor where water would drip through the boards, and it was kinda damp under there and cool. And eventually when he said it was about ready, why (this was in a tub bein' cooled under there, and it'd sit there for quite a while), we went down there to test it out, and when you'd pick a bottle

up, it was as likely to break as not, it was so wild [laughs]. Finally, in order to get a taste of it, we had to take the bottle and turn it up pointed into a pitcher. You couldn't take the cap off you know, the regular way, because it would be all over you. You'd take a nail and poke it through, hit it into the cap, and then the foam would come out, and you'd fill a big pitcher full, and when it finally settled down, then you'd drink a little bit, and you'd sure go on your ear in a hurry [laughs]. So that was his beer. It was a little bit too strong, and not very good tasting either.

But, yeah, I guess Pioche generally has got a reputation of having been rather a wild camp. And there were a lot of stories when we were operating down there generated from these Saturday night dances and things like that. Even during the '30s, I guess, to some extent. But there weren't so many working, you see, then. It was when the big crew came in. And there was excitement later on in the '40s when we had lots of men. The Ely Valley mine was goin'. The Caselton mine was goin'. The Prince mine was going, and the Bristol was going. All of 'em going. There were at least 600 people employed in the mines. So of course, with that number, there didn't have to be over a small percentage that was raisin' hell [laughs] to generate a lot of pretty good stories.

One of 'em, one of our churn drill helpers that later became a churn driller; working I think six days a week, but in the Saturday and Sunday evenings, why he was hired as a bouncer over there. And he had a harelip which caused those relating the story to mimic. The story on him was kind of amusing. The story goes that he was down at Gus Messaloid's place, and the word came that there was trouble up at Ernie's. And he got the word, and somebody asked him, "Where ya going?"

"Oh, up at Ernie's. There's trouble brewin' up at Ernie's." [Laughs] And so he bounced out, and some of 'em went up to see what it was about. They walked up. Well he ran. He went into Ernie's, and before they got in through the swinging doors, why here he came out, you know, flyin' through the air, and landed in the gutter. And he looked up at this fella that saw him, and he says, "I told ya she's a brewin'!" [Laughs] So the trouble threw the bouncer out [laughs].

You see, Panaca, twelve miles or so south of Pioche, was almost a hundred percent Mormon community. And I know that way back when we went out there in the early '20s, why there was a great rivalry between Pioche and Panaca. And Panaca just didn't see eye to eye with Pioche at all. And Pioche was, you know, talkin' about the Mormons that had horns, you know. It was one of those things. And I went out there with that impression. You know, there was quite a rivalry.

And I remember while we're talkin' 'bout, you know, back there in the '20s, there'd be these peddlers selling fruit from over in southern Utah, and you always knew that they put the good fruit on top of the box [laughs]. And you'd say, "That's a typical Mormon stunt," you know. Of course it wasn't, because they were Mormon. I suppose it wouldn't have mattered who they were if they were makin' a meager livin' out of selling some fruit [laughs]. They did the best they could to fool ya. And I don't think there's any correlation with denomination. Because I remember a story my father related from way back when the folks were livin' down in southern California in the salt grass country— well, the Presbyterian minister maybe would be accused of cheatin' on the amount of hay, weight of hay or somethin' else you know. [Laughs] So it goes through any place you want to look.

At any rate, there was that great rivalry. But I saw that fade rather rapidly. And I think largely it faded with the southern Utah population and young fellas being our greatest source of labor; and coming in and getting mixed up with everybody else in the mines, and around.

When I went out to Bristol, most of the crew was an Italian crew. They turned out to be the ones that would be the first to ask for a lease, and they were good pick miners. They'd been to Bristol years before, and then the crew that we built up above that would be from boys over in southern Utah. And some of the Utah boys would turn out to be pretty good leasers after a little experience. So it was, apparently there was a lot more division in the '20s, you see, than there was starting in with, well probably with the depression. And even the CCC camps, bringin' people in from all around and so forth, contributed to mutual acceptance, see. And then we eventually saw Panaca not all Mormon any more. Other people moved down there. And Pioche is very largely Mormon, I guess, today. There's a nice Mormon Church in Pioche, and Caliente, too. So it's gotten pretty well integrated in that way.

And the other thing is too, I think that I've seen a great deal of respect generated for the Mormons in my time. Because they've hung tightly to the idea of a close knit family. They've hung closely to the idea of self-reliance and being—well, providing your own independence. And if somebody's in trouble, why they believe in direct personal aid rather than lookin' to the government for aid. They believe in it to the extent where they do it even if you could go get the government aid. Most communities, I think, where they *are* strong, just prefer to see it handled that way. And I can agree with all that. I think it's great.

And I have a daughter who's down there now at our old Prince house. (Now we're steppin' way up to today. But anyway we're on a particular subject there.) And she's telling us on the phone how she is doing—of course, she was raised as LDS here in Reno, well from Pioche to Salt Lake to here; my wife is LDS. But, she's getting very much interested in this idea of getting her own machine—I think it costs \$500—for grinding wheat for flour; and she's talking about a family down there where there's, oh, I don't know how many kids—ten or something, and they want to have more [laughs]. They really don't have any fancy job, but they're able to take care of all these, because they get these whole bags of wheat and grind it to make bread; and I guess make bread practically everyday for the family, right from scratch. And they can buy sugar right today, she says, at thirty cents a pound, from over in southern Utah. I guess it probably comes through LDS channels. See the church has farms, and they probably raise sugar beets, and when the price of sugar goes out of sight, why they've got sugar to let their own people buy, you know. So they have a lot to be said for that whole system. It isn't economics particularly. It enters into the philosophy of life, philosophy of self-reliance and all that, I think. So, I'm all for it.

The reason that I'm not LDS isn't in that area at all. It's simply that I got fixed ideas a long time ago that they haven't persuaded me out of—that in order to be LDS, you've got to believe certain things, and you don't turn around and create a false belief just to get in a church, you know! [Laughs] So, I think I'm just as religious as they are, in my way. And I don't think that my beliefs would stack up on equality with my own church, with the Presbyterian church I was baptized in. I think they've drifted off here in a different direction, in many cases. And maybe I've drifted in a

direction that wouldn't have been accepted in the past either—the time that I was baptized even. I don't know.

But I think, and one of the strong beliefs that I have, is that religion or the belief in the supernatural is instinctive. I believe it came right to us from back there by our Creator. And I think it's in everybody, and I don't believe there's any such thing as true atheists. I just don't believe it. People that talk that way are, in my belief, just are ignorant! [Laughs] I think they've got the same instincts that I have. They just don't know themselves [laughs]. I don't know how that stacks up with others or whether my own thoughts might become altered; to some extent they surely will if I live much longer [laughs].

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## FREE ENTERPRISE, LABOR INCENTIVES AND THE OLD STOPE PROGRAM

The Caselton mill had been built in 1941, and it was in the fall of 1941 that the Prince mine became reactivated. So that 1942 was the first year that the Prince property had a full year of operation based on eight hundred-level sulphide ore. But anyway, it was soon after Pearl Harbor that we were faced with how the mines were to operate under the war emergency powers, and the premium price plan, which was initiated to encourage the production of the base metals, not the precious metals. And government policy looked unfair to the people that were ready to go—were given no credit— while the ones that weren't ready beforehand received extra premiums to pay for all the preparation and start-up costs. And it was a natural thing, I think, on behalf of the government to step in and give a lot of extra money to those that weren't ready, to get 'em ready; but if you had anticipated the need, you didn't get any credit for that. And if you were already operating, why, you had to operate under the *minimum* premium price plan or no premium price plan. Then they had three different levels of

premiums above base that they would pay, depending on how much help you needed to get goin'. Of course, in my particular case, I felt kind of put down by this in two respects: that the Prince mine already had a shaft sunk and already had the ore body opened up (which we were interested in), and the other property that I was interested in at that time was the, previously mentioned, Tecopa mines down in the desert country of California.

And immediately the costs on that Tecopa operations rose rapidly because of labor costs and not being able to get men, and supplies, and everything. So the costs skyrocketed, but this was primarily a precious metal mine—gold and silver—and it had lead in it, so you had to operate to produce lead. But they didn't allow any credit for the precious metal content of the ore except for the effect of the precious metal in reducing your cost of producing the lead, see. So, without going into any detail on that, the whole plan certainly did set back the value of the ore bodies in these two properties versus other properties that I saw operating at the same time.



Now, that was a little frustrating. Although in another sense, it was not considered unfair because you're in war. And I could've been required to go over there and get shot at, too, but I couldn't do [that] even if I wanted to [laughs], 'cause I was there involved in the mining operations. Well, it wound up that shortly after that, well by 1945, I was involved with all three companies, Bristol and Prince and Combined Metals, because I took the job of geologist in charge of engineering for Combined Metals, and I was still advising Bristol in some of their exploration development, and also, you know, consulting at the Prince, where my brother was the president of the company and was there all the time.

Well, anyway, coming back then to how the operations went during the war years. It was really kind of a madhouse, Bristol was going as hard as it could go, shipping direct smelting ore; and the Prince mine was going; and the Ely Valley mine, under John Janney, was going. Ely Valley shipped its ore to the Caselton mill that was going full blast milling the sulphide ores to produce and ship lead and zinc concentrates. I would hazard the estimate that we had over six hundred employees, between these different properties working in the country. And, particularly at the Caselton mine, the work force was migratory. It has frequently been said there was a crew working, a crew coming, and a crew going. So you know, the turnover was terrific. But things really went very well in accomplishing planned production. And it was, of course, a requirement that we get everything out we could, during those years when maximum production was required. So we were real busy, plenty busy. And I don't think anybody made any great amount of money out of any of this, because the costs were very high, and you were depleting the ore reserve as fast as you

could, and getting the minimum amount of money out of the sale of the concentrates that the government could figure out—tryin' to keep people [laughs] from makin' a windfall out of mining production, or anything else, I guess. And you really couldn't argue with that, during the war years, you see.

I saw what looked like some unfairness in it, but you cannot expect any regulatory agency to do everything just right anyway. I mean the only basis for efficient and fair operations, I think, comes with the good old American system of free enterprise and lettin' the market, the *free* market, test what you do [laughs]. Well of course, we couldn't have a free market in that time. And it was natural that we couldn't. So I wouldn't want to leave the impression that I had any argument with it [laughs]. That's just the way it was.

#### **BLACKS IN EASTERN NEVADA MINING DURING THE 1940S**

And we went through the war years then with all kinds of people comin' in and goin' out. One of the experiences relates to the beginning of the time when operators were supposed to hire the proper proportion of blacks. And I don't know when this push came on to assure a balanced employment between the blacks and whites. Incidentally, only Negroes were considered because it was just customary to hire Mexicans or other minorities if they came along, so it was the Negro that we're talkin' about. And there was no thought of tryin' to get a balance between other races and the Anglo-Saxon, but it was the Negro. And so part of the government directive when the government was releasing Army personnel for work in the mines (which they did, because the mines were behind with manpower, so they released quite a few semi-qualified people out of the Army

with experience that could be applied to this production of base metals). So whenever they were releasing some of these people, why the Army was required to release a proportionate number of blacks.

And an experience I had in that connection was when a Negro came in, and I at that time was geologist in charge of engineering, and I was also second in charge of the Combined Metals Nevada operation. It fell to me to meet a busload of men and was forewarned there might be a problem. I went over and met a bus coming in and here was a coal black Negro. We didn't have one on our crew at the time, and we had a big government financed employee housing project with a bunkhouse, right near the boardinghouse that had all been built for this war effort, you know, in a great big hurry. And so I drove up to this bunkhouse, with my black companion and parked in front. There were two or three fellas looking through the glass door out of the bunkhouse and saw me with this black boy, and I told him (I was of course friendly with him; he was a nice fella), "I'm not sure, now, that there's room in here. I've gotta go in and see if there's a place, if there's room." And as I walked up to the door, I was met just inside the door by two of the workmen that saw me with this black boy, and said, "Mr. Gemmill, you're not bringing that boy in here." And I said, "Well, I just came in to see if there's a place and how it would fit." And they said, "Well, doesn't matter whether there's a place, the rest of us will walk out if you do." [Laughs] So, of course, that had to mean there wasn't a place. So I went out and told him there wasn't a place in there for him. And I took him back to town. [Laughs] And there was one hotel in town—the oldest hotel in town, an old firetrap as a matter of fact—that I went up to and walked in, and there was a lady, elderly lady, who was running it. I've forgotten the name of the hotel; it was

on Main Street, above the present location of Lincoln County Telephone building in that area. And it's since been destroyed. But there was this lady running it, and she was renting rooms at a dollar a night or something like that; and I got him in there, and he took the bus out the next day. Well, he let me know that he had just come over representing a group of blacks to see if they would fit here, see. Before he took his suitcase, you know—when I put him in the hotel, then he and I chatted a little bit. And he said that his mission, although there'd been several of 'em hired for Pioche, you know, why his mission was to see if this was a place the group would like.

Well, as it worked out, then, Anaconda had one mine (and I believe it was the Victoria mine that has only recently opened up), that they were developing at that time up in Elko County. And so they put a whole crew of blacks, in one place, and that took up some blacks. The associated companies of Anaconda then, used their share there. And as far as the Combined Metals operation and other operations affiliated with the Snyder interests, the Triumph mine operating up in Idaho, near Sun Valley—took a bunch of blacks and made an independent camp. They had an area that they all lived together in. They let them sort of run their own little camp, and very well done, and apparently this worked out fine. And they had their section in the mine, certain stopes that they worked in. That sort of reflects the difference between then and now doesn't it? In how the blacks are handled.

And of course, there has been a big evolution, tremendous evolution since that time. And most people I think today, feel comfortable with intelligent and educated black people around 'em, or I mean, whether they are educated or not, the evolution to social blending among all classes has had

to be by degrees. My mother was from the south, and of course, I believe the southerners have always been much more receptive to working with the blacks than the northerners have. Well, this is an interesting thing. Although I have to say (because of my family background), through most of my years, I suppose I've been just as prejudiced as anybody else, you know. That's the way you grow up having many prejudices, both good and bad. And I very much resented being forced to—well, I resented the policy of the government telling me how I had to think. In other words, I used to say to myself, well, if I don't like a man red hair, or don't like anything else, why I should have the right to work with him or not, you know. Well, my ideas changed [laughs]. And I think that the evolution in this regard has been a necessary thing, and it's probably worked out the only way it could work out. So! So much for that subject.

### **THE OLD STOPE PROGRAM**

Now the war years—our policy was to put a very strong incentive in the hands of the miner at the face, and the people that were working within the stope area, because that was where the production started; and the companies had a mining contract basis. Combined Metals did it on a cubic basis—that is, had a crew of engineers that would go underground, and measure so many cubic feet of ore that had been mined by a work crew, a mine contract crew, during a certain period, and they got paid by the “cubics” that they mined. And the supervisors had to go around, of course, and make sure that they weren't mining waste. But it was a bedded deposit, and it wasn't hard to do. You had a cut-off place at the top of the ore, and it was within stope sets (sort of like square sets) where the ore was mined. It wasn't too hard

to measure up the cubes. And the Prince mine had a different system of payment, and it was more based on, how much tonnage came out of a given area for a particular crew.

Bristol had some areas that were under lease to the men that were mining there. And in the earlier years when I was at the Bristol mine, we laid great emphasis on production under leases, where they were paid according to how the ore ran when it was shipped, and it was sort of a split-check deal, except for maybe newly found stopes of ore. Well, during the war years, a new ore body had been found that was mined, and Mr. Byron Hardie, during most of that time, was supervising the operation. And I think most of their men were on day's pay. The Ely Valley mine again was, I think, working on contract footage with all of their development. And of course, Combined Metals did the same. They'd have a contract crew paid by how much advance they made. But all the service crews were on straight day's pay, like the trammers, and the skip tender, and other service crews. Well, that was, of course, justified by the fact that miners were the hard people to get. You know once you got a good skip tender or once you got a good man on your hoists, or locomotive, or something like that, well he usually stayed. But it was these floaters, taking the harder jobs, that were the hardest to get.

Well, when the Army released men, of course, we picked up some excellent help, and some of those men stayed with us for years afterwards and became well trained in all phases of the operation, including maybe making an electrician out of somebody that had never been one. He starts out as helper or something. But good men. And also in the mechanical department.

Well, the war years came to an end. And, soon after that metal prices were a factor in causing the operation to drift into poor paying

periods. The company had mills in Nevada and Utah, the Caselton mill and the Bauer, Utah mill, so at any time there was a lot of metal in the pipeline (meaning in concentrate and metal awaiting settlement); and a big drop in the metal price would occur, due to the lagging time factor for payment by the smelter and refiner (Anaconda Company). Sometimes this pipeline of material that was produced while good price quotes prevailed, by the time it was paid for at much lower metal prices, the whole process of mining, milling and shipping came out at a loss. So, the war years ended with 1945. And 1945 was really the time that I became more involved with Combined Metals.

And things went on from there until 1949, when a slump in the metal prices and also the depletion of our good sulfide ore at the Prince mine caused us to shut that one down in '49. And I think Bristol was still going. But I had less and less to do with Bristol, because of being more and more involved with Combined Metals, as time went on.

And after a few more years, I believe in about '51 or '52 (somewhere around there), I was the general superintendent down there. Because we were rapidly depleting the ore reserves in the main Caselton ore channel, the company officials decided to get involved in a manganese program, and it was primarily based on the proposition that they could get almost unlimited amount of cheap power, in respect to what they needed down at Henderson. And the Henderson plant at Basic was going begging, and Nevada was anxious to use power, which they'd otherwise lose if they didn't use it. But, anyway, between Combined Metals and their associates, why, there was a chance there to pick up two of the Basic Magnesium Plant units at Henderson—if they would be used. And this forced a rather urgent and rapid decision to go into processing the

manganese bearing oxidized ores and some of the carbonate manganese ores of the district, for production of ferro manganese. And they had a government contract that was not properly drawn up for escalation of prices as costs went up, and so forth. At any rate, this Pioche Manganese Company was organized, and quite a vigorous attempt made that cost Combined Metals a lot of money and a lot of losses. The Pioche Manganese Company itself (not part of Combined Metals), built electric furnaces at Henderson to use the power. Combined Metals went into a mine development program, and got organized for production. That phase of it was under my direction. The Pioche Manganese built a kiln plant for roasting and nodulizing concentrate from the mill, and they went into a process of trying to get going on ferro manganese production.

Well, this did not work. There were several reasons why it didn't work. But anyway, I think the manganese project closed down in the early '50s, probably about '52. And by 1954, we had gotten back into an old stope area (on my suggestion that certain sections of the ore bed would not have been mined back in the earlier days, because of the fact that they weren't getting very much for even good grade ore). Knowing that some of the horizons of the bed wouldn't have been mined, we got back into the richest blocks of ore (stoped in the 1930s), known as the nine [hundred] sixty and eleven hundred area, and found that you could really go right through the old area and remine it. So we went into what was known as the "old stope" program. And we had some visitors along about that time, looking over the company and its prospects. Among other people we had visit us, who we took all through the workings, was Dr. Harrison Schmitt, the father of the moon geologist-astronaut, Harrison Hagan-Schmitt. Anyway,

Harrison Schmitt, internationally known professional geologist, visited us. And I had a very good visit with him, taking him through the property, before we had mined very much in the “old stope” area. And he confirmed my opinion very quickly. He stated that he’d been through this two or three times—goin’ back into old mines that were supposed to be mined out, and remining ’em you know [laughs], with new technology, or new metallurgy, or one thing or another.

And, sure enough, we got to going pretty good in the “old stope” program. And at that time, we devised a new system of incentive that worked beautifully—a lot better than the old incentive system of, you know, strong incentive for the man at the face, and all the service population havin’ to serve him; and comin’ in with their union meetings every little while, and grievances, and you couldn’t lay off a man without an objection. After we started production in the “old stope” area and proved that it could go (but still our production was too low to make any money—we were only producing maybe three thousand tons a month, and we had a mill of much higher capacity), we instituted a system where everybody was on a bonus. And the people in the stope area were on a little higher bonus than the service population, but everybody had a piece of it. And it was a mild one that only was predicated on the ore grade based on hoisted assays, not on shipment records, but just rough hoisted assays multiplied by the tons per man shift, which is like multiplying apples times oranges or somethin’, but it did create a factor. And then we paid a certain amount for anything over—say, if it was ten percent combined lead-zinc (not counting the silver, ’cause the silver went with the lead anyway), and you produced three tons per man shift for the period, why you’d have thirty points. Well,

thirty points was the standard, and anything over thirty points went into a bonus package, multiplied by, I think it was eighteen cents a unit. And that built up a bonus package, and you’d distribute it out to the men based on whether they were a four-point men, three-point men, or two-point men. Points based on importance of the activity and degree to which the workman’s efforts would influence production.

Well, without going into the details of this, why, this immediately put the men into a bonus situation, where they got better than the Kennecott scale, which we were competing with for men—Kennecott up at Ely. And, so, I don’t think we drew men from Kennecott, but at least the men that were working for us knew that they were getting better pay, than Kennecott, due to their teamwork and cooperation, it wasn’t a matter of doin’ hard work, but it was cooperation mostly. And the example I like to cite is that when miners were on just straight days’ pay, and they’d come out to one of these raise hoists—maybe you’re hoisting from the level down below up to the bedded ore, and you’ve got a hoistman on the raise hoist, and he’s gotta hoist a bunch of timber up that’s gonna be used in the stope area—and a miner comes out there and has to go down to get some drill steel or somethin’, why, normally he’d sit on a powder box waiting for the timber to be unloaded off the skip. Well, under the new system (you know everybody was cooperating), he’d get in there and help to unload the timber, so he could go down and get his steel a little quicker. But nobody was killin’ themselves. Everybody cooperated, even the skip tenders, and everybody was in the system—had some piece of the action. We didn’t have any more union meetings at all. They just didn’t—. You know, they were all union members, and they paid their union dues, but they didn’t have any



gripes. And you had to lay somebody off—the shift boss saw somebody really layin' down on the job, or didn't show up for work enough times—laid him off. There wasn't any meeting over it, because the men didn't want that kind of a guy on their crew, see.

And so, really what you're talkin' about is putting management in the hands of the men at the face, and especially this goes for the underground mine. They're out there in the dark. Maybe a boss sees 'em a couple of times a shift. You can't be there tellin' them what to do. You have to have a system where they're in charge of what they're doin'. Well, the old system of a strong bonus for the miner at the face worked at the face, yes. But how about all the rest of the crew, see? And cooperation of *all* of the men in the crew really turned out to mean more than a strong bonus for the guy doing the production at the face. And, I guess I was a believer in that from a long time back, because of the Bristol experience, where we had block leases operating on their own and realizing, you know, that people need to have an incentive to do what they do.

And this again, comes right back to the fight that the industry is putting on today, right up here in 1975, against the bureaucrats back in Washington that want to destroy the 1872 mining law, or the basic principle of the 1872 mining law, that permits an individual to go out, and if he finds somethin' he can acquire ownership. He has right to hold it and even to buy and sell, even before he's got title in fee to it, see. That's the principle of the 1872 mining law that we *must* preserve if we expect to continue to find and develop properties from the grass roots or from small showings into mines. And these bureaucrats do not listen, and they don't realize—you can't tell 'em, and tell 'em, but they don't know. It seems to take direct experience. The old saying that history teaches, that

history teaches nothing, is with us today the same as it ever was. And it's only the people that've been through the trail, or seen it happen repeatedly out here in the field, who understand it. But, and I'm gettin' off the subject maybe a little bit, but it's the right place to say this—that the incentive provided by the old 1872 law, causes people to go out and spend their time and effort; maybe they've got a job somewhere, but they try to dig it, or try to do something with the property.

Maybe one phase of it is a wild promotion in which the promoter didn't even have any intention of makin' it go and he falls on his face. And somebody else picks it up, and maybe it goes through twenty years of people off and on tryin'. And finally somebody comes up with a strong enough showing so that it's attractive to a real investing-type mining company.

And at this point, it's a good idea to point out that Mr. Howard Edwards of Anaconda Company, put in the congressional hearings on a mining bill, that of all the numerous properties that Anaconda had, their geological crew had found only one of their properties, and that was the Jackpile uranium mine down in New Mexico. And all the rest of 'em had come through the evolution of the small miner, and the small to medium sized operations. Acquisitions were properties that had been developed to something that Anaconda could send their geological experts in, and mining experts to examine, and decide whether they wanted to buy it or not see. So that's the way the substantial producers are built up. And in this mining game, I don't think there's anything more important for me to say, and try and point out to people, than this principle. You have to dangle this incentive out to everybody, because it happens, and happens, and happens, all the



time, that something is found where it's not supposed to be [laughs], you know.

And the last experience I had with Combined Metals— now we're talkin' a few years down the line—but it was after we closed down the Pioche operations. That was in 1957, when the metal price dropped, cut out our profitability, and forced us to leave ore reserve in the old stopes that still rests there. And nothing has happened that would make that profitable until very recently. I think it would be profitable now to open up the old stopes that still rests there. And nothing has happened that would make that profitable until very recently. I think it would be profitable now to open up the old stope ore, after lead, and zinc, and silver prices— particularly silver going above that ninety-one cents where price rested there for so long. And it will be opened up, and that ore'll be mined. But, 1957 is when the mine closed for lack of profitability, and here it is when the mine closed for lack of profitability, and here it is 1975. And that's known ore that's sittin' there and blocked out, see? So, time is such an important factor that some of the proposed government mining legislation would kick you out of the property for no purpose. They even propose that when the ore is mined out the property should revert to government ownership, you know, you'd have to say that the Caselton mine was mined out when it closed down, because ore is something you can mine at a profit. You see? And so it was mined out. But, then when the price comes up, it's not mined out any more. But even then it's not ready to operate, because it's gonna take a tremendous effort to get back in, rehabilitate adits and tunnels and raises, and retimber, get a crew trained and developed— when there haven't been crews developed in all these years, and miners are as scarce as hen's teeth today—it's gonna be a tremendous

effort to get back in there and mine that ore. And yet, you could say, on paper, you can say it would be profitable, see?

These are vital considerations and it's just too bad. And imagine the miner's dilemma when it comes to today's one man and one vote emphasis with the media tellin' people what to think, and the pollster comin' along and sayin' they think it, and the politician havin' to jump at what the people think—that is what the pollster says they think—imagine tryin' to get this kind of information about mining in Nevada into the collective mind of the masses of people, say in Las Vegas. Can't do it [laughs]. Just can't do it.

## UNIONS

Now, returning to the bonus plan or bonus system, and as well as it worked, what about the outside union organizers? Well, they didn't need to have any more union meetings and grievance procedures and so forth. Grievances are still in the hands of your local union people. In the hands of your crew. They could exercise their will on the outside organizer, or the man that's really over them in the union hierarchy. This was the Steelworkers Union, is what it was, and their head man for that area was in Las Vegas, and he went there from Pioche. And he'd come up every once in a while. But they didn't call on him to come and do anything, because they were satisfied. See, the dues were being paid. He had no kick.

There had been Mine, Mill and Smelter Workers' Union, and our men kicked Mine-Mill out, 'cause they identified them as being too radical. And they changed from Mine-Mill to the Steelworkers. And, it was at Pioche, incidentally, and I participated in the process of negotiation and working out the method through Mine-Mill that was adopted at other properties out West, a process of

designating different jobs under different job classifications by a point system, that related to the wage, you see. And it was quite a task to do that. And I was right in the middle of that. And we had a very tough-minded negotiator by the name of Rasmussen. He was there to bring West the job classification system and he came from steel mills back East. And it was a very disturbing and very difficult time. This was not when I had overall charge of the operation. It was before that, but I was in on it. I was more in charge at the Prince. And we never had any problem with bothersome grievances at all there at the Prince. Nevertheless, our men were, I guess most of 'em, were members of the union. But it was a smaller operation, you see.

However, up at the Caselton, well there were a lot of gyrations going there. I noticed one thing about it, the union president happened to be a hoisting engineer at the time, and through all this folderol of working out the job class, or points system, it turned out a hoisting engineer was really a top point man [laughs]. Later on, the same fella turned out to be our master mechanic [laughs] - He was a pretty good negotiator. And he was pretty good at handling men, too. So, you know the same man that you might be the maddest at for the trouble he causes, if you get him on your side, he might be your best guy, you know [laughs]. It's a little education in human nature to go through those things, I'm tellin' you.

I'll tell you about this kicking the Mine-Mill out of there. Well, I can't define exactly all of the little things that came along. The Mine-Mill were inclined to tell the fellas, "Well, you haven't done good enough; you gotta make 'em do this, and you gotta make 'em do that." And yet we were gettin' along pretty well with our men. And we never had a strike. The company had always been very

cooperative with the men, the men with the company. And although we had quite a few union meetings, and grievances, and things like that to go through, and it took up quite a bit of time, and you'd have difficulty lettin' a man go if he wasn't a good man, and all that, why nevertheless, it never came to a strike, see? It came to some tough bargaining, but when that tough bargaining wasn't good enough to please the outsider that came in to see what they'd done, why the men just said, "Well, to hell with you. We'll go over here; we'll have our own union." Well, it turned out, instead of them having their own, why, they joined the Steelworkers.

Actually, the local representative was Van Englestead. Very nice fella that had been a miner and the local union president under the Steelworkers there at Pioche. He's the man that went up in the Union to go to Las Vegas over a bigger area. We called him Van. And he continued to hold that job after that. He was a very reasonable sort of a person, he'd come up, he knew the men, and they knew him. They never had any problem. When they were satisfied, he was satisfied see? Now, I don't know how that went in other operations with the Steelworkers, but theirs was the only union at Pioche from then on.

Now, we weren't like say, Kennecott with a number of different unions to deal with. We just had the one. And we had no problem with them. And we didn't try to keep unions out. Some operations do, and succeed in doing it. We just worked with 'em. But the secret of working with 'em was a matter of havin' them with you on your side of the fence see, and recognizing that they were getting fair treatment. So that worked out great.

In 1954, about the end of the Pioche Manganese attempt, it was a matter of going back and trying to see what we could do with the "old stope program," and we

succeeded with that, until 1957. And we got our production up then, to about 10,000 tons a month; and we were making between the mine and the mill about \$30,000 a month, just mining out of the old stope area, which looked pretty good, see. But, right in the middle of 1957, we had a disastrous drop in the price of metals that just closed us down.

Well, the Bauer operation—by 1956 I had become general manager of the company. They had taken me from Pioche, as the Pioche manager, and put me in as the overall manager for both the Nevada and Utah operations. And we had properties in Nevada other than just the mine and mill at Pioche. We had a couple of properties where we were in joint venture with American Zinc Company. And we had assessment work and what not. And then up in Utah, we had a mill and mine at Bauer Utah, near Tooele in Tooele County, and we were custom milling some ore. That mill was the original Combined Metals mill to which Pioche ore had been shipped in the earlier days, before the Caselton mill was built.

Well that mill was running, and the Honerine-Muscatine mine was running. This is an old property. In fact, the surface workings there were first opened up and operated a little bit by Army Engineers that explored Utah—I guess the first producer in the state of Utah—where they dug out lead (lead oxide ore), and melted it down for bullets, so I'm told. Well, which property you'd call it we don't know, because there were several names: Buestone, HonerineMuscatine, so forth. But, that group of properties was being operated, and losing heavily the two previous years (1954 and 1955). And it was operated on a basis of just hiring people, and very strong unionism. They never had a strike, but the men were havin' union meetings. It seemed every time you'd open your door why there was something

happening with the union. Spending half your time with that. And yet, the mine was losing quite a bit of money. And I went out and *lived* there for a while. We had an apartment in Salt Lake (home still being at Prince mine), I lived at Bauer for a while. And I knew what had to be done, if I was gonna go on. That was in '56—it had to be organized so the men were working on your side of the fence, instead of tryin' to make work for themselves.

And so with considerable care, I hinted, you know, that we oughta get a system working there. And I had a young fella that I thought I was gonna make into a pretty good superintendent out there. Somehow or other, he didn't seem to catch on to the idea. I sent him down to Pioche where he did very good work as mine engineer. The mine foreman (Red Cameron), who had some time prior to that been the local union president got my ideas pretty fast. And this resulted in our posting of a notice the mine would go down, which was truthful. But I'd planted the seed with Red Cameron—he went around to the best men on the crew, and suggested to 'em, "All right now, they're goin' down with this, but before they close down and let the water come in, see if we can't get a lease, a split-check lease." Well, this, you see, was a much stronger type of incentive than we used down in Pioche. So they came in to negotiate on the split-check leasing system.

Well, at the time, Sam Craig was the manager at Bauer. And Sam had been an Army man. The Army methods are rather Well, you know how the Army works. You have cut and dried things on paper, and the directive is the way you do it; and if you want to find out whether you're right or not, you turn to it and the record and look, and this is the way you do it, see. And of course, he'd been using his union contract as the written code with the men, and if they got out of

line, “Why, look here fella [points], this is where you belong,” see. Well, this was to be a different system—one that he hadn’t been operating under (and no criticism of Sam; hell, he was a hell of a good guy, a very good friend of mine). But, that was the rule book system they’d been operating under all the time. There was also Bill Kelsey, the chief engineer, had his mechanical department out there, and he was very, very proud of it. And that department was entirely separate from the rest set up to earn it’s way charging for services to mine and mill. And then the mill over here, another separate unit, each one independent, serving mine and mechanical department serving both mine and mill.

So anyway, Red Cameron went around. We got about half of the crew to take a split-check lease in the mine. Well first they came in and the mechanical department, of course, was gonna have to come in the mine and maintain the pumps; and when the two-mile-long adit needed periodic maintenance to prevent cave-ins, there was supposed to be somebody go in and do that; and these fellas were gonna be the miners. And I scotched that right quick, ’cause that wasn’t my idea at all. I knew that that crew of picked men had done everything— old-timers that’d been in the shops, had been in the mill even, and they’d done everything. (Of course it didn’t matter whether they’d been in the mill, but I knew that they could do everything, timbering and everything else.) So I said, “No, if we’re gonna do anything like this, you fellas that’ve got the lease have got to do everything back of the portal of this tunnel (adit). If you’ve got a pump that wears out, *you’ll* be the ones that takes the pump out, brings it out, and if it has to go to the shop, you take it to the shop, and the shop’ll fix it. And if you need a new set of bowls, why we’ll furnish the repaired set of bowls, but you’ll take it back and put it in.

And the basis of the split will be that.” They accepted this. And, that was fine. and it looked like it was workin’ pretty good. The leasers never made a trip in or out without hauling a load of ore. They didn’t have man-trips, they had ore-trips [laughs], you know. And this was a very difficult situation to operate, ’cause of the long adit in, and the deep winze, then over on another level, and down another winze, and it was hot. And a guy had a hard time gettin’ in a full shift of work. In fact, nobody could get in a full shift, but they made their hours count in efficient performance. The first rattle out of the box—we didn’t even get started with this mine lease before Red Cameron, who had been receptive to the leasing idea, started promoting a mill lease. So he went—without his talkin’ to me—he went around to the fellas that’d been runnin’ the mill, and the lab people that’d been doing metallurgic test work, and got them to come in to Sam Craig, and propose that they take a lease on the mill. Well, it took twenty-one men to man every designated job in the mill, under the union contract. Well, six men came in and asked for the lease on the mill, ’cause they worked it out among themselves. The mill could actually be run with three men on the floor, you see. If the bins were full, and there was nothin’ to do but run the ore through the mill (and the mill had way more capacity than the mine was producing), their thought was, they’d let the ore pile up and when there was enough ore to run the crushing plant, they’d run the crushing plant and get it into the bins. And when they had enough ore in the bins to run the mill, they’d start up the mill, and run the mill ’round the clock—six men; three men on a shift; two, twelve-hour shifts—until they got that ore milled out. And then, because they had enough capacity, they’d go fishin’ or somethin’; and come back and start the cycle over again.

Well, the mill had been losing a lot of money every month, just even maintaining it. And we started makin' five thousand dollars a month on the mill [laughs]. And these fellas made way too much money. They were makin' a couple of thousand dollars a month apiece, which caused the boss Ed Snyder, at the time, and the president of the company, to just hit the ceiling. "Well, those guys are about wearing out the mill or somethin'." And of course, it wasn't true, everyone of 'em was a mechanic, and they maintained the mill better than it'd been maintained before, because they didn't want any breakdown when they were runnin' the mill. If there was anything lookin' like it was gonna be bad, they had time to get in there and fix it before they ran the mill next time, see.

Well, it worked out real good, and we actually kept that mine and mill going through 1968, even though that property had lost about a hundred and twenty to a hundred and forty thousand dollars a year during the previous two years. We turned it around, and the lease crew was able, through our cooperation, to develop as much ore as they mined out during that period of time. They were not robbin' the mine. That was one of the accomplishments I'm quite proud to have been a part of. You see, Red Cameron got the notion [laughs] on the mill lease see.

And I might say, at this point, to show you that giving the miners a piece of the pie isn't a new thing. In the year 1872, the Meadow Valley Company, at Pioche, had already built a small mill in Dry Valley, out along the Meadow Valley Wash of Meadow Valley Creek. This little twenty-five ton mill, in 1872, paid six hundred thousand dollars in dividends, milling this rich silver ore, you know. But the superintendent's annual report for 1872, said this (and you can get it at the Library and quote it), he said, "We have had a

great deal of trouble at our mill with the hard ore." They were mining this high grade silver ore out of veins in quartzite, and they were getting, of course, a certain amount of very hard quartzite waste; hiring men to mine the ore, and of course, the men didn't care if a little quartzite got in the ore. The superintendent continued, "We soon solved the problem by buying the ore from the miners." Same thing wasn't it? See. And apparently, he didn't go on to explain it in detail—this really oughta be looked up and quoted—but what he really meant was that the miners in different locations in the mine would carefully sort and rack up at their work place—ore that they had mined. On narrow veins this is commonly called chloriding. And sometimes they'd have a pretty wide vein of course, and it was not much trouble to do it. But they'd rack up their ore, and then it'd be sampled, and they'd get paid in accordance with how good it was, see. So the company was "buying" the ore from the miners. I would've called it a leasing system or somethin' like that. But it's all the same difference. It puts the incentive [pounding] at the right place. And then, they didn't have this hard quartzite waste to impede crushing, rate of through-put and excessive wear. [Laughs] That was a pretty smart superintendent, see. Well, he was just a practical one, I'd say.



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## LAST YEARS WITH COMBINED METALS

Now we're starting in about 1954, when my residence was still at the old Prince mine in the house that we had fixed up—my wife and I had—over the years—done quite a bit of work fixing up an old house down there. And the story of that *alone* would be an interesting story from our own personal viewpoint, but certainly not to other people. You know, adding a bedroom, adding a second bath, and all of this kind of thing. But we fixed a very nice place of it for a while. We had a lawn all around it. And we could entertain guests. And we had a player piano, and we could play these old, old rolls, and get people—you know, on a celebrating evening like Christmas Eve, or New Year's, or something—we could have all the engineers, the young engineers and their wives, and everybody, come down to our house and I could pump the player piano, and play at the fiddle (which I used to play in junior college orchestra. I'm no good at it, but that doesn't matter, if everybody's feelin' good enough, see). And everybody gathered around the piano singing, why you can play this fiddle; and once in a while you

hit the right note at the same time that you harmonize with the piano, and it sounds all right [laughs]. So we had a lot of fun that way. We had expanded the living area in the house, and added to it, and carpeted it, and draped it, and everything, so that we had a place that people talked about quite a bit. And my wife spent her time—. She never did, you know, go get a job or anything. Her job was makin' a home, and she did a beautiful job of it. And I've always been proud to show her off—you know, show her works off, and her too. So. Anyway, we had a lot of fun. Any place we've been, and we've always done this; try and improve where we were. So that was a part of the experience.

And well, while I was still out at Bristol, I joined the St. John's Lodge number eighteen in 1936, I believe it was. And when I got married in 1938 to my wife, Fern Jensen, why, right away she went into the Eastern Star and became Worthy Matron at the same time that I was Master of the Lodge. I worked up to Master of the Lodge rather quickly, because we had so few people in the Lodge [laughs].



You know, sometimes you'd have a meeting, and you wouldn't have over half a dozen people there, and so immediately you had to step into the chairs, and go through the chairs, and all of that. This is goin' way back, but while we were at Bristol, even in the winter time, we'd make our trip into Lodge faithfully. And she had her meetings in the Stars, and we'd see that she got there too. And she became Worthy Matron right away, in the same way. Well, we haven't since then, followed up on our activities in the Masonic Orders, for the reason that we just had other things that were more important to us. Maybe when we get slowed down more in our activities, then we might start. I think a lot of people do that—take a bigger interest. While I was still with CMR company, I entered into the Kerak Temple Lodge here at Reno in October 1960. Fern has not renewed her interest up here, and I can understand because our family business has taken up our time.

But anyway, going back to 1954—. We were generating the operation in the old stope area, and I think I covered that a little bit with you. And the Pioche Manganese thing was behind us. They'd gotten in so cheaply in purchase and use of a couple of plants down in Henderson, that I believe the investments in electric furnaces for the Pioche Manganese operation was largely recovered just by selling one of these plants to the National Lead Company. And then, I guess, eventually they sold the other plant; and I think the investors in Pioche Manganese didn't do too bad. (Millbanks were mainly the investors.) And they still had the kiln plant at Pioche sitting there without any use; and it's been sitting there ever since. And coming up to almost the present time, it is running now (Weatherley & Son from McGill), and I'll tell you about that later. But it's been sitting there all those years.

Then in 1955, we had the old stope program going fairly well. The company was in some problems, and the president of the company, Mr. E. H. Snyder, was heavily involved with putting together the Uranium Reduction Company, based on Charlie Steen's Mi Vida mine down in Moab. And so he had to spend a lot of time away back in New York in putting finances together and everything. And he joined in with the American Zinc Company; President Howard I. Young and Mr. Snyder were very good friends and the two companies joined together in building the Uranium Reduction Company mill. The mill process was based on testing the ore by various processes that the government had been instrumental in investigating. And they settled on a process and built that mill. In the meantime, several other ore bodies were discovered in the Moab area, so that this turned out to be a major uranium mill in Moab. As I say, the name "Uranium Reduction Company" came from Combined Metals Reduction Company, that was part of the venture.

Well, I never did get involved in that phase of the company's activity at all. American Zinc assumed responsibility for mill design. And I was busy with the "old stope program." A man by the name of S. W. (Sam) Farnsworth was injected into the picture about that time, by the eastern interests—a man that had been an administrator for the Millbank interests and had, in other ventures, stepped into companies that were in trouble, and had to do with pulling them out. They'd find a company that was in trouble, and change the management, or change their processes, or pull in some better advice or whatever to make profitable.

Well, due to the fact that Mr. Snyder was away, it seemed to them necessary, I

guess, to send somebody in to help. And so Mr. Farnsworth came out repeatedly; met with those of us that were running the different units of the company. There was Sam Craig from Bauer, Utah, who was in charge of operations at Bauer. There was Max Kennard, who had been (and was when Mr. Farnsworth first stepped in) the manager of Pioche Manganese Company; and had formerly been an engineer with Combined Metals, and had previously been manager out at Bauer, Utah. Mr. Snyder had put him in as the general manager of Pioche Manganese Company. So he was one of the people that Farnsworth would call for group conferences. And Mr. Craig from Bauer, and myself from Pioche, and Mr. Kelsey W. H. Kelsey, who was, you might say a charter member of Combined Metals, from the very inception of the company, back at the same time that Mr. Snyder and my wife's father, Mr. Jensen, had started out with the Bauer, Utah mill, and developing the flotation process for these very complicated ores. There are other names that would go into that, if I could think back. Like Johnny Green who was a flotation expert that had a lot to do with the development of the flotation process for these particular ores, and his name should be mentioned in connection with Combined Metals Production Company.) But anyway, Bill Kelsey was one of those that Farnsworth would meet with. And E. H. Snyder, Jr., the son of Mr. Ed Snyder, was another that would be in the conferences.

And so we had several conferences. Usually, Mr. Farnsworth would rent a suite in the Hotel Utah, and call us all in there, and have lunch served, and he'd listen to everybody's discussion and arguments over what was wrong and what was right and everything. Well, finally Mr. Farnsworth made the decision

that I was to be manager and I guess of course, with Mr. Snyder's consent, but he seemed to have more or less full authority due to the fact Mr. Snyder was way off on the uranium job. With the help of American Zinc Company President, H. I. Young, they did a very good job of that. It was one of the things that saved the company at one time, because they were able to sell bonds that Combined got out of puttin' that thing together. Anyway, Mr. Farnsworth, apparently was basically the one that made the decision that he would put me in as general manager of the company. So I became general manager of the company in 1956.

In the meantime, our daughter was born, who I named "Tamby." No other person goes by that name. That's her nickname. We had given her the name Terry Renay [laughs]. And so of course, from there on, why she has been pampered as the only child—so she's been the biggest project of my wife, and sometimes of me, as she grew up. And we've gotten a tremendous amount of pleasure out of her. And I think we've gotten enough pleasure out of her so we didn't need a big family [laughs]. So, that, as I say, kind of gives you an idea of where the family life stood at that time and since.

And in '56, then, with the Utah operation also under my direction, why, I started spending quite a bit of time up there. And we got an apartment. And I lived at Bauer for a while. And I believe that I went over that a little bit with you, and how we converted the operation to a split-check leasing system and turned it around so that it made some money for a while, until the end of 1958, when it had to go down. But the Pioche operation had to go down in the summer of 1957. Well, I think we've come, then, through those periods.

I might say a little bit about the crew at Bauer, because this was a crew that had lived there; and most of the crew that remained

after we went to this reduced crew, were men that had just grown up there, you know and that'd been part of the community at Tooele and at Stockton (Stockton was near the plant) and within the plant, so that, why Lord, that crew they had men there that could do all the rewinding of motors whenever a motor'd blow up. And you'd send motors up from Pioche. And there were crews that could just do anything, you know—work over old equipment or build cars, float cells, etc. And Bill Kelsey was great at going to the junk man and buying stuff that the junk man didn't know was good. And he'd buy it, and fix it up, and he could always cut corners on building things. Bill Kelsey was a real first class mechanical and design engineer.

### **FOSSIL ROSIN (RESIN)**

And at the time I went up there, the company had been in the business of processing fossil rosin out of coal. There was a coal deposit up in Carbon County, Utah, that had quite a bit of fossil rosin in it. And you know what rosin is? It's the sap from trees, a form of natural resin. But in the formation of certain coal beds, there was a lot of this fossil rosin in there. And U. S. Fuel Co. had been shipping coal sludge down to Bauer, Utah, where CMR Co. floated the rosin out of the coal, and had developed a process to treat the flotation concentrate. They had a man by the name of Ernest Klepetko, who had been prominent in developing a process for extracting the rosin out of the coal concentrate with hexane. It is not a process of dissolving, it's a process of more like mixing, because in dissolving a salt, you don't add to the volume of the solution. When you add the rosin to the hexane that you put on it, it increases the volume by the amount of rosin that you put in it. So it's a different thing. It's

really dealing with colloids making a pregnant liquor of hexane and rosin. So, in order to clean up this pregnant liquor, you'd have to filter it. This was done in totally enclosed leaf filters into which pumps supplied the pulp of liquor to be cleaned of remaining fine coal and silt. Periodically the operator had to open this filter cover in the building where this was going on, so you'd have it just loaded with hexane in the atmosphere, and a very dangerous possibility of explosion and fire and all that. And you'd have enclosed tanks of hexane in the building. And then to get the resin out of the pregnant liquor, after you've filtered out the dirt, you'd go over to a process of driving off the hexane in a heater, and having to go to a very high heat in order to melt the resin, and have it pour out in drums and so forth.

There'd been a fire, and it destroyed the plant. Well, we went through the process then, of rebuilding this plant, about the time I went up to Salt Lake. Reconstruction of the business resulted in U. S. Fuel Company building a flotation plant at their mine so resin concentrate rather than the raw coal dust ("big dust") was henceforth the product sent to Bauer. A lot of the equipment that had been in plant was used again. But Mr. Kelsey, again, did a bang-up job of rebuilding the plant for a minimum amount of money; and of course, it was insured; and it got going again, and a lot better type of operation than it had been before. Well, in spite of the fact that my background wasn't one that would relate to this kind of a processing, it was rather unique processing anyway, so I just had to get involved. I had a good deal to do with how we did some of it. So that was a little experience in itself.

And the resin was used largely in inks, in fast-drying inks, especially because it had what's known as rapid solvent release.

The high temperature melting point meant that when you'd use it in an ink, and you'd try to print on slick paper, and heat-set the ink, why you could drive off the solvent very rapidly and not leave it sticky. So it could go in printing on slick paper. And the competitive products were lower grade that would, say, be used in newspaper inks and so forth. How much of this got into different kinds of ink, I don't know. But anyway, that was the principal outlet, and then we got it into 3M [Minnesota Mining & Manufacturing Company]. They use it on some of their stickum tapes, I guess. And the most difficult one was when we got it into American Chicle Company, taking the place of chicle in gun. For this chicle use we'd make a spray dry product that was very powdery. In taking it out of the hexane, you'd spray dry the pregnant liquor through a heating device—steam-heated hearths—and you'd come out with a very dusty, fine spray dried product, and then in order to deodorize it, we made an experiment with a plaster mixer—puttin' steam through it—and that led to the putting together of a deodorizing device that was primarily my innovation—or I called, invention. We didn't patent it or anything. But, it worked pretty good, and was working when I left the company later on in '62. Taste and odor I found out, are the same thing, you know. And so in order to test the deodorized product, why you'd have smellers, a panel of smellers [laughs].

But for some reason or other, I guess this business of making sure that every batch was good, finally led into trouble, and American Chicle quit taking it. I don't think the American Chicle account really made very much money, because it was so much trouble anyway. But, the plant was still with us when the company went into receivership later on, eventually resin plant—to be sold as a separate unit in paying of f creditors.

## **BERYLLIUM**

Well anyway, that experience was going on, the perlite plant at Pioche was running but doing very poorly, because most of the companies that we had been shipping perlite to, were of f on their own deposits, and you know, producing their own product and expanding their own perlite after it got to their plant. And we didn't try to expand and ship; we just crushed perlite and shipped it to the expanders, all over the United States. And at one time we were the principal producer, I guess, in the country, about five thousand tons a month, but that dwindled largely and the perlite unit was down to where it wasn't paying very much.

The company then found itself (when both the Bauer operation in '58, and the Pioche operation in '57 went down), with principal activities evaporated, 'cause of metal prices. So we needed something to use our talents and give us a little glamour. But first let me tell about a former Pioche leaser that came to me with his problem. Lory Free, a young Panaca fella that had been, with other family members, leasing and working in mining for some years, decided he should go and take an engineering course. Well, Lory decided then to go to BYU University and see if he couldn't get an engineering degree, and I encouraged him to—he being L.D.S. And he went up there, and the first thing they did was give him an examination. And they told him that they could make an engineer out of him all right. He had a good high school education—and they would. But his examination showed that he would be a top salesman. And so they told him, while he was goin' to school, he might as well earn his living selling insurance for the Beneficial Life Company, which is a Mormon based, organized insurance company. So Lory took their advice; and my gosh, he got to be

a top salesman right quick. And a little later on, he got top prizes, and I think he got to be the top salesman somewhere along the line—but still interested in mining. I don't know whether he ever got his degree as a mining engineer or not, but he learned quite a bit about the engineering anyway, at their school on top of his earlier practical mining experience. The reason I bring this up is that, when we were at the bottom of the barrel, and not making any money, and didn't have enough things for our chiefs to do—more chiefs than Indians— why, Lory comes into my office with an assay of beryllium from down at Spor Mountain, Utah. And some people that had been producing fluorite down there under the government's fluorite purchase program, and had made a lot of money— various ones of the farmers had gone into the mining of fluorite. (This is a little comment might be thrown in here: All it takes is a good farmer to be a good miner, because they've got to know equipment too, you know [laughs].) And so they'd mined quite a bit of fluorite, under a high government price for fluorite, during the war years. Well, the high price was gone, but they still went out prospecting; and one of these fellas, I believe it was Miller, had dug a trench in some clay, because it had some fluorite in it, and it was sort of a fluorite prospect.

And the story I got out of this was that Miller was over in Ely with some of this clay in his pickup, along with some other rocks, at a time when Anaconda was working on the Mt. Wheeler beryllium deposit. (I could mention more about that, and my past connection with that previously, during the tungsten program when we were in it.) But, at any rate, they had a beryllometer. And a beryllometer is to beryllium like a Geiger counter is to uranium. That is, it's a device that you can, on the spot, detect the presence, and roughly the quantity,

of beryllium in a sample. Unlike a Geiger counter, you bombard the sample first, and it's the talking back to you, reflecting back from the beryllium content that you count like a Geiger counter would count. But in doing this you've got to have an activated source of antimony, that's very dangerous to handle, and it has to be handled in a lead shielded device that you carry around, and you keep yourself from ever being bombarded with it. And you set it on a sample, after you've taken the lead shield off, and count the number of clicks you get back on the scale. And then you can tell what you've got in beryllium.

Well, Reggie Lee (then the Pioche supervisor) and I both, during this slack period, had been hunting for a way to get off the company's back. I mean, we were on half pay, and the company was in financial difficulties. So, when Lory came into my office with this sample—this Delta prospector had been to Ely, his pickup load of rocks had been tested with a beryllometer, and the clay tested good. So Lory went out, took a sample in the trench, had it assayed chemically, and it was very good, went a couple of percent in BeO. And he came in with this assay, and asked me what he oughta do with it, where he oughta go. He had a deal on the back of an envelope from this fella Miller—that had the claim—and Lory asked what ought he do with it. Well, I thought of two or three things. But finally, I walked in to Ed Snyder, who was in the office at the time, told him that maybe here was a chance for us to be doing something that could lead somewhere, you know. At least give the company a little glamour, and maybe give us somethin' to do, suggesting perhaps I oughta go down and look at it. And I had called Reggie Lee, our engineer-supervisor at Pioche and Reggie, in thinking about the Mt. Wheeler thing (which was attracting attention for beryllium), had



gone to Los Angeles all on his own, at his own expense, and gotten trained in the use of a beryllometer. He's the first, and I guess the only one, that ever rented one from the people that made it. It was a new device. And he had agreed that he would like to rent one, but he hadn't taken it, and the option time was about to run out. He had a few months. They notified him that his time was about up. So he took it. And it had just arrived the day before Lory Free walked into my office. So we set up an appointment. Lory Free and I went down in his pickup, and met Reg from Pioche. Reg was in charge of our things down at Pioche at the time. And Reg came up to Delta. We went out to the place where this sample had been taken—with the beryllometer—and we went all over the area. And we dug in other places where there were clay showings; and made a decision in one day, due to having that kind of an instrument, that this was something CMR oughta follow up on. And not only that, but the evidence on the ground indicated that whenever the clay was all dried out and right on the surface, and the sun had exposed it and all this, why it didn't have any kick. But when you'd dig down into it a ways, and it got moist, and then it would, frequently, test very good. So I decided that it must be migrating in the clay. Nature has a long, long time to do this. And why beryllium would be migrating, I don't know. But anyway, I decided it must be migrating, and therefore that it must be soluble in something.

And so I asked Reg to take samples of this to Pioche with him, and take it in the lab. And Corwin Likens had been the mill man at Pioche; and he was working in the lab on different experiments that the company was still playin' with. And Corwin took it and put acid on it, sulfuric acid and hydrochloric acid, and then you'd pour it off and test the residue and test the solution, and sure enough,

the beryllium content was soluble in acid. So that was the original discovery showing solubility in acid. As it developed, the reason it was soluble in acid (you know, these things always turn out to be simple after you know the answer), was that in the clay was a fair amount, maybe two or three percent, fluorite (calcium fluoride). And when you put acid on fluorite, you generate hydrofluoric acid, and the hydrofluoric acid attacked the beryllium mineral, which is in microscopic particles probably of bertrandite or phenokite. So fluoride made the silicate mineral soluble. But that solubility made the basic decision why the Combined Metals oughta go into this, because we pictured this as being a relatively simply process to get the beryllium out of this clay.

So in deciding what to do about it, why, a venture was set up, where Combined Metals had thirty-seven percent; Charlie Steen was in on it with money and his drill rigs; and a man by the name of Mr. Irving Bennett, who had been the salesman for resin, was in on it. And then Reg Lee was given a little bit for his part in it you know, because he rented the beryllometer. And Ott Burton, the accountant for the company, took a piece of it—put some money into it. Ed Snyder, himself, put money into it. I was offered a position, and I turned it down, because I was gonna be manager of the venture. And I didn't want to be—you know, I was gonna have to decide whether the bills from the Charlie Steen's drilling outfit were proper and in order. I told Ed Snyder I'd like to have a piece, but if I had done a good job when it was all over, why, they could look at it and give me somethin' for it. Didn't happen, but anyway, we rented our CMR equipment to the venture and devoted staff to exploration for the thirty-seven percent interest. (That was another thing. I had to be independent.) We rented our bulldozers, and what equipment



Combined had. And we even put men that we were trying to save on the payroll, like our shift bosses, and people like that up there, workin' on the development of this deposit. And we picked up about four hundred claims.

Among other things, we located claims down in the valley where nothing but the overlying flow rock was exposed, and on this theory of beryllium being soluble and migrating— I had the theory, and still have it. And I don't know, I don't think that anybody else has the theory, but I do—that the beryllium in that clay originates from an overlying eight hundred-foot thick, topaz-bearing flow rock. In fact, it's the Topaz Mountains out there. And the topaz is a fluorine-bearing mineral, and the flow rock also has little particles of fluorite. And I believe that it has a minute trace of beryllium, and that the weathering, and the meteoric waters percolating through the overlying flow rock, gathered the beryllium and put it into this clay. And the clay was generated from a volcanic tuff bed underlying that flow rock. And the minute the fluorine solutions attacked the tuff bed, it made clay, it altered tuff to clay; and trapped the beryllium. Now that's my theory on how that was made. And there's literature written up by USGS and everybody on these deposits, but people don't go for that kind of an origin. I still do. I think that's it.

Anyway, the reason we located claims down in the valley, was because of that theory—the overlying flow rock. And we located quite a few claims down there. The major reserves have later proven to be down there under that flow rock. And that's kind of a little pat on the back for myself in a way [laughs]. But, anyway, we don't need to put that in this paper because—. I've always felt kind of proud of the fact that even if I'm wrong, the thought made it happen [laughs].

And, to follow up, at this point, on that, it was interest in the beryllium deposit, that years later under receivership we sold to Anaconda for \$475,000. When I was trying to do something with the company and save it, that cash from Anaconda, buying that interest, that we used along with several property sales to hold the company together for six years, during reorganization and litigation. So that's been a satisfaction; although I probably shouldn't mention it.

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Anyway, we wound up with the beryllium venture then, which was the reason, the principal reason I was staying with the company, for a period of time there. And then this resin business—. I also had a special attraction to that. I thought that it had some rather large potential, after studying it and writing a voluminous report on its potential, and processing and market. And along came a man by the name of Jack Wilson, from Pennsylvania Industrial Chemical Company, who was the executive vice president in charge of sales. He had run into this product in the market place, and was very much interested in it, and he thought his company would like to acquire it, or at least acquire the major output of it. So he came in to see me, and I got persuaded that this was a way to go, because we weren't makin' any money with the resin business. The salesman, Mr. Bennett, who was also one of these partners in the beryllium thing—he was doing quite well with resin sales, in my opinion. But, the company was just tradin' dollars with him doing the bulk of sales through his own company.

So in 1962, after we had made our deal with Anaconda, on the beryllium business; gotten out all that had been invested in it for all the investors. They'd all gotten their money

back. And Anaconda issued a million dollar revenue bond resting with the venturers, plus an interest in the ultimate company Anaconda was gonna set up to market beryllium, see. Well, it never did happen, because Anaconda lost out in their competition for market, but they did finally buy the venturers out, as I stated above. But at the initial stages with Anaconda, they gave everybody their money back. That helped Combined Metals a little bit, because we'd rented the venture a lot of equipment, and we had a lot of salary charges against it and incidentals. And gettin' that money back was the next phase that sort of helped us along. And the remaining thing we had that looked like it could do somethin' at the time, with the market for metals not being very good, was this resin business.

And this fella, Jack Wilson, and his proposal, sounded awful good to me—that we could enter into an arrangement with them for the principal output of our plant. We had no contract with Mr. Bennett or any of these people that we were selling to, 3M or anybody else. So we were perfectly free to deal with this outfit. And they were a big enough outfit; and I thought this was our opportunity to make somethin' out of that business.

So I got Mr. Snyder and Mr. Bennett together, and I spent a couple of days (I've even got notes in my diary. I looked it up not long ago), arguing with them over what we should do. And Mr. Bennett was adamant we shouldn't do it (go with Wilson); and of course, he didn't really have any say if we wanted to move. And Mr. Snyder wouldn't move. So within a few days I quit. That's when I quit Combined Metals, in 1962. And, I saw no other thing, no other reason why I'd stick with the company, at the time. I was on half pay. I think I had \$17,000 coming at the time—back pay. They eventually paid it off, a little bit every month after that. And Mr. Ott

Burton, the chief accountant was very faithful about sending my monthly check until it was finally paid off.



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## LAND DEVELOPMENT WORK IN LINCOLN COUNTY

Here we go back in time to describe how land development became initiated. Then I went back down to Pioche, and living at our old house down there at Prince Camp. In 1953, I had the mumps. And while I was in bed with the mumps, and worrying because I had no mining activity like I had had down in the desert with the Shoshone Mines, Inc. (I made a nice little stake out of that by the time we eventually sold out.) But, I wanted to have something of my own. So I decided I was gonna take up a Desert Entry.

Well, anyway, I talked to some people. Finally I wound up, after discussions, buying some property from the Prince Company, that the Prince Company had been trying to sell. Being a director of the Prince Company, I withdrew myself from any decision and presented it to the rest of the directors. They got an appraiser to look it over; and I bought it at the appraised value. And then I went out to find it. This was an area that my brother thought maybe I could do somethin' with, if I wanted to develop agricultural land as a sort of a sideline hobby.

And so I went out to find the land, and found the old 1872 surveys were practically all, obliterated. I had to go back and get original field notes to find corners. As soon as I located where the ground was, I found out that two families up in Rose Valley had the best land in the valley there, adjacent to the Prince ground. The Prince ground had been acquired to secure tailings from the old Meadow Valley mill that was built in Dry Valley way back in the 1870s. And so fee land was primarily there because of the mill. But, the bottom ground was found to be these two parcels owned by people from up in Rose Valley. Well, without going into the story of the details, I wound up buying that.

Over a period of several years, spare time was spent on surveys and detail mapping of Dry Valley leading to applications for desert entries in my name and wife's name, which ultimately increased fee land acreage to over fourteen hundred acres. My wife, Fern, frequently helped on "recon" work, and we drilled a well soon after land purchases. The well didn't turn out worth a darn. And we

licked our wounds for one year; and drilled another well; and it didn't turn out either. This would have been probably in about '56, '57, along in there. And the fella that drilled the second well, was testing it, said, "Well, we could try dry ice in it, you know." And he did. And it turned out to be a beautiful well. So, they went back and tested the first one, and that turned out good. So, then we had two wells, and we raised crops. Crops looked good and we sold a couple of hundred acres to Chet Oxborrow who is an old hand, old time Lincoln County rancher family, but had gone off in other places, and wound up as a contractor in Las Vegas building houses. But he was anxious to get back into Lincoln County, and he bought one ranch down near Caliente. And when he saw the first crops that we raised on the first, a hundred and thirty acres or so. Under direction of a local farmer, we raised some safflower and twenty acres of barley, and sixty acres of wheat. And they were bumper crops, but we had difficulty with them, 'cause I didn't have harvesting equipment. And I was away when the safflower was being grown, and I knew nothing about safflower. And the rancher that was raising it for me, didn't either. And when he saw all the beautiful flowers all over this field, and was afraid that maybe an early frost might hit, he took the water off, and the safflower all developed without any oil in the seeds, because he took the water off at the wrong time (we found out later). So we invited the Delmues to have their cattle eat the safflower of f. But the barley crop produced a bumper crop right out of the sagebrush. And the wheat did well, except that we wound up with a bum piece of equipment harvesting it, and before we got around to gettin' the right thing and all that, why, half of the wheat landed on the ground. But we got wheat off

of it anyway, and it's proved the ground. And Chet Oxborrow just had to have this property.

So, we sold couple of hundred acres to Chet, and then we started puttin' more money, later on, back into developing more wells. Due to being in the valley, I tried to promote a reservoir, fishing reservoir, in the valley. (And, I'm gonna go ahead of my story here because let's finish that phase of things, because this is when I left Combined. I was out of the mining business, and let's see what I did with it.) So, I tried to get a reservoir, you know, through community cooperation, in the upper end of this valley, because I saw an opportunity there for a recreation deal. And I was attending the rural development meetings there in the county these two years that I was there—not doing anything but developing my land and taking on the problem of water-well work for everybody in the county. I had a lot of fun doing that. I learned an awful lot about the ranch land in Lincoln County—all through the county— out into Pahrnagat Valley. They were putting in a new water system out there and a concrete ditch. And I had to, well, apply for water diversion through the state engineer's office as a water right engineer, and take care of that for 'em. And I scooted all over the county doing water-well work for people, while I was doin' my own job. Didn't make any money doing it. Most of those people can't pay you very much, and you wouldn't think of charging 'em very much. But it was a lot of fun.

Well, you know, it's awful hard to promote somethin' for yourself. In answer to proposed dam in Dry Valley, they came right in with a proposal that a dam be built up above Ursine, along the same drainage (the Meadow Valley drainage stream) stream in Lincoln County that runs outside of the state, you know—drains down into the Colorado eventually.

Well, up above Dry Valley where I was, the next valley is Rose Valley, and the next valley is Eagle Valley. And Ursine is in Eagle Valley. And up above Eagle Valley is what's known as the Eagle Valley Narrows. Well, in the November, 1962, Lester Mathews, my friend in Panaca—he was very active in the rural development group—prevailed on me to go up and see if there couldn't be a dam built up above there in the Narrows, because they'd been talkin' about it for some time. Well, I said okay. So I went up, and I spent about four days making a reconnaissance survey through the Narrows up above Ursine. And the place that they'd always been talking about a dam would have been a high dam, it would have had to be a multi-purpose dam, and it wouldn't've been any good, because it would've been built right on a fault. One side was steep cliffs against massive lime and dolomite with water courses, wouldn't have held water, anyway. And, so I picked out two sites further up that were entirely off the fault and in flow rock, and I was sure would hold water. And I chose the number four one, the one furthest up, made up a little estimate on what it would take to build it.

It happened that Howard Cannon was running for election at the time, and so the first reconnaissance report that I made on this dam proposal, I sent to Howard Cannon. And he used it in his political literature in running for election; and, actually made a copy of my map and put it in his brochures. And he got after federal Fish and Wildlife to supply matching funds if Lincoln County could find the other matching.

Clair Christenson had been our county agent down there, and I knew him quite well. So Clair took a copy of this report; and they'd had some pretty good luck around the state with the Fleischmann fund helping out on

things, especially in hospitals and so forth. And just how Clair did it, I don't know. But anyway, the other forces took over—people that were better at this than I—and got the Fleischmann fund involved in providing the matching money for the project.

Well, to make a long story short, the darn got built. There were difficulties. I estimated it on the basis of using a solid rock spillway, but for some crazy reason the Fish and Game handed it to some engineers that proposed a concrete spillway over the face of the dam that ran it *way* over my estimate. And so it was gonna be lost; and so they had me fly down from Reno, and we got Bob Wilkin (the local contractor that I knew), to come in and persuade people that excavation in solid rock wasn't that expensive. And we went back to the solid rock, and we got it built. But I think, one of the major efforts was Clair Christenson himself, 'cause there was a lady in Ursine, Mrs. [Maggie] Warren, an elderly lady, that had always been very much opposed to anybody even putting a log in the stream above Ursine, that might, she thought, prevent her gettin' all her water [laughs]. Well, I think it took a couple of years to get a water district organized in Eagle Valley. After they got the water district organized, and the vast majority of the people concerned were all for it, why, then they got approval on building this structure.

Here I'm gonna tell you somethin' else that I was kind of proud of. This little quick reconnaissance engineering job that I did through the Narrows up there, as to the cost of this dam and everything, and the size of it, and you know, how many surface acres the proposed dam would cover. With my stadia rod, and without any help, and posting my stadia rod in a tree down here, and goin' up half a mile and takin' a shot at it, and goin' like



that, and then a few Brunton shots, I made up my reconnaissance report, and came up with sixty surface acres behind this dam. The Fish and Game people sent engineers up there with plane tables, and made rather detailed and careful engineering report, which they had to do, of course. And Don Osborne, the engineer for Nevada's Fish and Game came to me afterward, and he says, "I don't know how you came up with that, you know, in the time you spent on it." He said, "You said it was sixty acres, and we come up—." I think he said it was sixty-one. [Laughs] And of course, it could have been quite different, because they might've designed it a little higher or lower or somethin'. But anyway, that was kind of fun. And the dam got built.

Later on, to complete the story, after that was in, it was attracting a lot of people from Las Vegas, up there recreation and fishing and everything. A couple of years went by. Well, anyway, Clair came to me and said, "You know that Eagle Valley Narrows thing's been working out pretty good, and some of these people are asking if you would go for what you originally talked about over there in Dry Valley," you know. (And by that time Clair had been boosted up here to Reno. And he was with the Extension Service, serving the whole state, on project development, and working under Dr. Stein. And I got to know Dr. Stein pretty well too. A very good friend of mine. That is on account of his connections, you know—working together.)

And I said, "Sure my wife and I will give you forty acres to build it on, and I'll show you where to build it, and I'll do the reconnaissance engineering on it." And I did—did a quicky job, proposed it; and well, to make a long story short—. By this time, Chet Oxborrow was in our valley, and raisin' crops on the acreage I'd sold him down below (the proposed Echo Reservoir site),

and we had been goin' on drilling water wells for developing the rest of the valley. In the meantime, I was up here and wasn't there to attend to things. I did get the reconnaissance job done. But from there on, it was Clair Christenson, and mainly Chet Oxborrow, then raising crops in the valley there, who made the thing happen. Fleischmann fund wasn't about to furnish matching funds for another darn, after helping finance one, you know. (And I might say that the people down there hadn't been properly appreciative, I think, of what Fleischmann fund had done. They should've put a great big plaque up there, and given the public more notice of what Fleischmann fund did in building that upper dam. I told 'em so. They may have it by now, but they had been a little dilatory that way.) At any rate, they couldn't get anything out of Fleischmann fund.

But Chet was pretty well acquainted in Las Vegas, and when the Echo dam looked like it wasn't gonna go—. They could get the federal money all right, through a different agency. It wasn't the federal Fish and Wildlife. It was through Rural Area Development I believe. Christenson found it, whatever it was. And the county was certainly not gonna be bonded for doing it. (And Chet Oxborrow was one of the county commissioners too, by that time—a double reason why it wouldn't be bonded. He wasn't gonna see the county bonded for anything.) [Laughs] But, Chet knew people in Las Vegas pretty well. So he went down and saw the county commissioners in Clark County, and told 'em that they oughta come up there, and furnish the matching money for this, because it was Clark County people who were enjoying this Eagle Valley facility. He says, "You can count the cars, and ninety percent of them are from Clark County. What're you gonna do about it. This is a helluva good recreation area for

you.” So they recognized that it was a good thing, but they said no. There was no way they could put Clark County money into Lincoln County. It’s absolutely out of the question. But before he got out of the meeting, they told him, they said, “Mr. Oxborrow, there’s one thing we could do. If building a road for you, or something like that would do any good, we could just slip that in maybe.”

He said, “Well, you’ve done it.”

And so they built and paved eight miles of branch road from the Ursine road out to the Dry Valley, and to the site of this darn. And that, plus the value placed on the forty acres that my wife and I gave them, to build this structure on— (actually there was another forty acres of open federal land above that, and then the Narrows above that, that it would back up into. So it would make about, I think, seventy acres, seventy surface acre reservoir). Well anyway, those values of the road and the forty acres appraised as a dam site furnished together the matching funds to build the dam [laughs]. And Echo Dam got built. And it’s in. And it’s taking time to fill up or stay full, because of seepage. And we’ve had some dry years, too. It’s gonna take either somebody puttin’ somethin’ in there to seal it, or just a matter of time until enough mud seals it. But when I was down recently, it looked pretty good. People were enjoying all of the recreation spots around the dam, and it was almost totally filled with campers. Of course, it was over fourth of July period, and everything was full that year.

The State Park soon got interested in taking over the Eagle Valley dam after it was built. And not only that, but the State Park went up and were interested in buying a lot of land there in Spring Valley. And they didn’t want to pay the price, so it didn’t get sold to State Park; it got sold to Art Linkletter. And then the State Parks turned around and

bought it from him, after the value had been established. So they’ve got, I think it’s about eight hundred acres in Spring Valley—the State Park has. Now I guess they lease it back to cattle people, because it’s important that cattle people use it; feed the meadow grass and the cattle be on it, ‘cause through the use of it, it puts feed value into the reservoir as a fishing pond, you see.

And so they got involved first in the Eagle Valley thing, and then after—. I think even during construction, why, they took an interest in the Echo reservoir thing; and came to us and wanted to know if they could acquire it—the ground around it, above it, through the Narrows, which is, you know, where the Echo Cliffs are. Actually, it was my wife that named this Echo Dam, because of the echo you get at that Echo Point. And so they finally insisted on buying through the Narrows plus eighty acres below the dam—some of it pretty good agricultural land. And we dickered. We didn’t want to hold ‘em up, and we didn’t want to get less than whatever it would be worth, so we commissioned Reno realtor-appraiser, Preston Hale, and had him be our representative and work with the State Park appraisers. So we finally arrived at a value. I think we could have pressed for more, but anyway, it was good, because State Parks taking it over certainly didn’t hurt the rest of the valley, you see.

So it hasn’t been long since that time, after the other well that we’d drilled, and proved up on two Desert Entries in the valley, one in my name, one in my wife’s name, acquiring that other land that I told you about from the Rose Valley people, and finding one *prime* forty-acre piece that long since had been deeded to the county for taxes. Had ‘em put it up for sale. And I bought that for eighty dollars, two dollars an acre [laughs]. Of course, that was way back in the early days lookin’ into the

valley when I was learnin' where the property was [laughs]. Maybe you shouldn't mention that [laughs]. But they put it up on the court house steps, and we had Al Scott handle it for us, and he put in the bid, and nobody else bid, and so we bought it [laughs].

Anyway, well, now the windup of this is, Chet was in there farming, and Chet finally decides that valley is a lot better than his lower place. He liked the volume of water developed by two deep wells we'd had drilled and the expanse of good land. We worked up a three-way trade, and he traded his lower place, which was a complete place—cattle ranch place—to us for a large acreage—eight hundred acres more or less in Dry Valley. And it was already planned that the Apaloosa horsegrower, Tom Clay, would buy his lower place for his horses. And so in a three-way trade, why we came up with what had been our objective. We simply had been in there as developers, and to prove up the valley. And so we had made the original deal with Chet, and we made the deal with the State Park people, on account of the reservoir. It all started with doin' the Eagle Valley Narrows report for community betterment and havin' them come back and want my original proposal in Dry Valley Desert Entries and gettin' it all put together in one package, came up with a reasonable outcome for myself and wife, which makes our retirement really. Of course, we did have to have the money that came from Tecopa—the original mining deal down near Death Valley, California. I've never had a job that provided any retirement set-up for me, including this part time one with the Nevada Mining Association. So I've always been faced with providing retirement in some way. And I've had a lot of fun doing these outside extracurricular things you see [laughs].

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## MINING LEGISLATION AND THE NEVADA MINING ASSOCIATION

The philosophy that needs to be spread, and understood by our legislators, and by the public at large these days— I think the first thing I have to point out is that the mining industry has a far more difficult problem in public relations than, say, the agriculture industry or manufacturing or any of the others, I guess, because, first of all, we've got the image of Appalachia spread across the country as though here in Nevada there'd been great harm to the earth in digging—which there hasn't been. The worst thing that I can point to, out here in Nevada, that the mining industry has been responsible for, was simply the obedience to the law, in digging a hole on every claim no matter how many claims you staked out. You had to go and dig a bulldozer hole on every claim, or excavate so many cubic feet, under the Nevada law, which we got changed recently, so that the locator doesn't have to dig a useless hole. Unless he's got mineral that he's digging on, why, there's no purpose in his digging a hole. He simply files a map, and pays a filing fee that gets it on the county records. This also

does the other thing of nailing a claim down to where it belongs. Instead of the vague but legal notice and certificate of location which seldom gave a precise position of the locator's claim, Nevada revised statute requires a map and filing fee that provides information and pays the county for maintaining current maps showing where the claim locations are, while eliminating the requirement of location holes on each and every prospect claim.

The old method did not prevent a prospector being able to change his location post or the notice in it, over a half-mile away where the excitement was, and caused a lot of confusion. And this has happened. I've seen it happen, where the vague description of where his claim was, and the law saying that his claim is where the stakes and markings are on the ground, regardless of the description. When you get into the excitement of a bunch of claim locations, among people like we ran into over in Delta (out of Delta, Utah, when we were acquiring beryllium ground in 1960, '61), why, you'd go out and find a stake with a notice in it, and maybe come back a week

later, and the same notice is in a different place, a half a mile away, and back dating or pre-dating another locator that had his stake over there, and so it caused all kinds of confusion.

Utah didn't have a law where any excavation had to be made. And the one thing that Nevada did have in the excavation requirement was the fact that the excavation tended, in some measure, to nail down where the claim was. Now, the map does it far better and without disturbing the land.

But the problems in Appalachia especially of course, the coal mines, and mine stripping, and denuding a lot of surface, and disturbing the water table to where pollution comes into the streams, and so forth. And I guess there have been big problems back there. But the tendency when all of Nevada's problems are shipped off to Washington for a solution and for Congress to debate and come up with solutions, the tendency is to reduce everything to the common denominator, and make everybody do the same thing regardless of need.

And this reminds me of the problem we had in the state legislature when we were considering the anti-pollution bills on air pollution, water pollution, and so forth. The League of Women Voters and Daisy Trevailya (who was hangin' around there all the time) were the lobbyists for the environmental movement, we'll call it; they were adamant in their position that the toughest kind of legislation should be imposed on everybody no matter *where they are*. In other words, the position was that you shouldn't allow somebody because they're gonna emit pollution into the atmosphere, say, to move out here into a far away place so that it won't bother anybody, because then you're just giving them a license to pollute. So, the thought was, and the position was, that

whatever this standard is, should be imposed anywhere and everywhere, because you're polluting the poor Earth!

And, of course, my argument was just the opposite, that there are certain things in the mining industry can't be conducted without having emissions, in some amount. And so I got ahold of Daisy one day, and I said, "I want to cite an example or two. If you've ever been down in southern California, in the Imperial Valley where they have very large cattle feeding lots, and you travel through there by car, as fast as you can travel, you'll go for miles holding your nose. No matter how fast you go, you're still gonna be bothered with the horrible stench. And yet, people are working there that don't even notice it, because they get used to it."

I said, "Would you recommend then, a law that would be so stringent that you could allow a cattle feeding lot on The Strip in Las Vegas? Or to put it another way, would you be for having the toilet in the kitchen?" And the attitude that you get, when you say something like that, is that they stick their nose in the air and walk away. They don't answer it, see.

Another case in point was we had a hearing among some students up here at the University, called by Sessions Wheeler, and we had some of the mining people, and myself. And Mr. Serdoz, who's the staff man on this pollution business, air pollution, and water pollution so forth, for the state agency, was there. And we were talking about this same thing of what kind of rules need to be laid down and so forth. Mr. Serdoz was asked, what about the particulate pollution, and what harm does it do? Doesn't it settle out of the air? Lord, if it's out here where nobody's bothered with it, why do we need such stringent regulations? Why do we need any real stringent regulations, if the people locally around us don't mind? And his answer was,

“Well, a lot of these fine particulates never do settle out of the air, and you’ll eventually pollute the earth.” Now, that’s how far out—this man who was supposed to be a technical expert on the thing, gets, because he figures it’s his job to make it just tough as you can. That was his answer. And it should’ve been knocked down right there, but it wasn’t, because you’re bein’ polite and so forth. And I’ve wished ever since I had, because I knew better. It’s even large molecules that get taken out of the air when the storm change and when the weather changes. In fact, if it hadn’t been, we couldn’t be here. The storms and everything. And I remember going down to a meeting of the governor’s Advisory Mining Board in Tonopah not long ago, on a windy, blustery day, and dry day. You could look down the valley where the old tailings were, down there in the old West End Mill (I think they called it), in the valley, where the tailings were blowing up the valley something fierce; and as I came back to Reno that afternoon through this blustery wind, I thought to myself, “Well, that really is quite a problem, isn’t it?”—seeing those tailings blow. But as I went valley after valley, all the way back to Reno, I saw very little difference, one valley to the other. These ground winds were pickin’ up the dust in every valley and tilling it up with pollution [laughs]. And more pollution in that one storm, I’m sure, than the mining industry would emit to the atmosphere in the state of Nevada in many, many years. So this is how far out this problem gets.

Well, the public doesn’t want to listen to that kind of thing, I think, because when you get into the present system— we’re talkin’ about a system that was created by this tremendous change and been created by two things in the very recent years. First, the Supreme Court’s decision of “one man, one vote” put the power in the hands of the

masses to make major decisions, providing, you know, they get information to base their judgment on. Well, the information they get to base their judgment on, comes from a new thing: the television instrument. And they base their judgment—the man comes home from work, takes a can of beer, and watches the news, and he gets told what to think. And then the pollster comes around and says, “he thinks it.” And the politician has no way to go but to jump in the direction that the pollster says the people think.

So, in my opinion, we haven’t got—well, what I’d say we’ve gone into is a—in a sense it’s a democracy, and it’s for the first time in our history in recent years, we’ve come into being a democracy, by having major decisions made by the rank and file of people that don’t know very much about what they’re doing. And yet the country was built, in my humble estimation, by the captains of industry that came and got special privileges out of the government. Look at the lands that were given away to the railroads to build railroads out west. We’ve evolved from that kind of a philosophy into the philosophy that, “Don’t ever let anybody have any special privilege. Don’t ever dangle out an incentive; hand it out by the government, because if you do, it’s a sin.” So we’ve taken the incentives out of our system, in my opinion. There isn’t any hope, I guess, that we could create a dynamic railroad system by going the other way, and turning over the operation of the railroads strictly to private industry to set the rates they damn please, and compete with the trucking industry? Hell, no. Right now the trucking industry has the ball, and they’ve got the political strength to prevent it if we try. So what’s the talk now? The talk is to turn the railroads over to Uncle Sam or to “nationalize” the railroads, is what you call it, and let the government run the railroads. And



I suppose it'll become more and more like the post office, and get less and less efficient all the time. Now that's the difference.

I think I mentioned before in talking about my career in mining, that if I ever had any special thing that was injected into my experience that made me somebody a little bit unusual in running a mine, it was through being a part time leaser myself, and later on running a mine with a bunch of leasers under me, in different sections of the mine—block leases—and then going from that to bigger operations where you had to create some kind of an incentive to get the maximum production from the men (and I think I covered this pretty well somewhere along the line), and that incentive idea is where we're lacking in our whole system. In fact, the big mining companies have difficulty creating anything like maximizing each person's efforts; you know, big mining companies have to create efficiency by simply the application of modern engineering practices; and then they negotiate with the men under a strong unionized system for wages (which are always being escalated, they never are held constant in any way, for a lot of reasons [chuckles]). As long as we have the government behind a system of inflating—which we have had for many years, since the '30s, they're actually supporting a system of inflation—you have to go along with giving higher and higher wage increases). But, if you want to get the maximum output out of a man, you've got to have him on an incentive plan, where he figures that he's part of the show. It's not easy to do that in the big organizations. Pretty damn hard. So, I don't know.

Well, what are we doing? We're supposed to be talking about the problems of the Mining Association, 'cause we've gotten into this period of time in 1964, when I came up here, at the request of some of the mining

people, to consider taking the job with the Nevada Mining Association as its executive secretary. And that was on July 1, 1964, that I took the job. And that's when I first really became acquainted, although I'd met, Mrs. Foster, who had been with the Association many years. Of course, I knew Lou Gordon quite well, who was prior executive secretary. And he had died several months before, after a long illness. So, I was told that, by the then board of directors (none of whom are still directors), that when I got to age sixty-five, I was to submit my resignation, and they'd look at it, you know. So, anyway, time went on. Maybe I've already intimated I think the biggest problems of the Association are in the political arena, both state and federal, in trying to keep things right-side-up, as well as serving the Association members. And the full memberships or regular memberships are memberships to mining companies that are operating, represented by their managers. For instance, there's Anaconda, and Kennecott, and Flintcote, and Duval, and Carlin Division of Newmont, the Cortez Joint Venture, so on. I was just mentioning some of the larger ones. Well, there are some thirty-five members of the Association. Some of 'em are small. They all have an equal vote, if it came to a vote. But, of course, the contributions are based upon the number of people employed, and the hours worked and so forth, under a certain formula, so that the larger operators are the principal supporters of the Association. And the membership's on the basis of associate membership, and affiliate membership—affiliate membership being usually suppliers to the mining industry, companies that supply products; and the associate membership, any individual who cares to join and get the newsletter.

The regular mining companies are provided a wage data booklet, loose-leaf

booklet, that keeps the wage contracts of the various mining companies up to date, on a basis that is made usable by Mrs. Foster, in expressing the terms of the wage agreement in a similar manner for the different contracts, although the contracts are quite different in the way they spell it out. So she has quite a job. And she's done this for all these years. And I never touch that side of it, because she does a very good job, and everybody's real happy with it. That's one of the services.

And then of course, we frequently have an operator call and want to know what he's to do about—maybe he's gonna start a property, or something of this or that, as to what you have to do. And I advise him to go and see the Environmental Protection Agency. And, fortunately, this environmental thing in Nevada was set up with the help of the lobby group, and the governor, so that it was not something that some of the environmental *activists* were trying to get, which would've been a group of people completely unrelated to industry. In other words, these people would regard an industry person on this board as a conflict of interests. And, of course, if our whole country had been developed on a basis of anybody that is interested in industry or in a profit, having a conflict of interest and not being allowed to come in and advise how to do a thing, we'd have been down the drink before we started!

But, anyway, the governor has been, this governor, Governor O'Callaghan has been a very helpful person in understanding both the politics and the reality of these situations. And I think he was wise in establishing this Environmental Protection Agency under himself, really, because it was the state agencies like the state engineer on water, the division of health person, and Elmo DeRicco, who heads the Department of Conservation and Natural Resources, and so on down the

line. These people were named as the agency. And then of course, they have to have a staff, and they have to have somebody to go out and measure what's going on, and enforce the law. And the law, we had to have a law, because the federal people arm-twist the state agencies or the states into having a law to comply with the federal requirement.

And there is one air shed in the state of Nevada that's named—I don't know whether there's another one now or not— but I remember back in the earlier days, there was one air shed in Las Vegas Valley that was named as a critical area. Actually, Clark County has a stiffer air pollution standard, set of standards, than the federal law would require, as I understand it. And there are mining operations down there that've really gone to a lot of expense to comply with the Clark County regulations. Nevertheless, there isn't any such thing as operating these properties with zero pollution. There's no way. And it would be ridiculous to think you're gonna come up with it, 'cause it is never gonna happen [laughs]. You can't have one more person come in to the state of Nevada without some more pollution. And on the one hand, we're attracting people trying to get more people come to Nevada, and the biggest polluter that we have is people.

You can't use water. You can't use water to irrigate without it being polluted, because you've let a certain amount of it be evaporated, and the soluble salts build up, and it's not as pure after you've irrigated with it, as it was before. And, so pollution is somethin' you live with, you don't eliminate it. So this is one of the, I guess, biggest battles the mining industry has, is trying to come up with the story that you've got to allow some pollution [chuckles].

Then in the Congress, and in the administration, we've had a constant push

by those that don't know any better, trying to convert the 1872 Mining Law into an all-leasing system, under which this right of ownership in a discovery is virtually eliminated. And, we think, you know, that maybe a change of administration from one party to another might have some influence on this; and I think people, maybe, are beginning to recognize that that's not true. The same people are there, the same philosophy is there, even if you change the top people running an agency. So, we're gonna have to live with the fact that tendency is there under one administration after another; in spite of the fact that the Public Land Law Review Commission came up with strong recommendations that the public lands remain open to mineral entry, and that the philosophy of the right of ownership in a discovery be retained. Mineral deposits are where nature put them, or where they are, and you can't lock up vast acreages and not be eliminating the potential of deposits that are yet unknown. So that right now, I think one of our greatest arguments is going on in that area, of trying to stop the tendency of locking up more of the federal lands against mineral entry. And I've read some statistics that say some fifty-five percent of the federal lands are already restricted. And that's a tremendous percentage of these lands. It really, when we're also facing a situation in the mineral extracting industry, that is similar to the oil picture, we've got to come back and develop our deposits.

The other thing that the public doesn't know, or doesn't appreciate—when you talk about the extractive mineral industry, you're talking about a wasting asset. Of course, immediately that is picked up in some quarters as to say: "Well, then you'd better set some of these aside for future generations. What're *they* gonna do when you've mined

out all your wasting assets?" Well, that's a very difficult thing to get over to the public—that when you're in a mineral province, there is an untold amount of that mineral. Let's take Arizona, with its mineral province in copper. It is in a copper mineral province. And the more of these you discover, the more you recognize that others are to be discovered. On the average, because of increased amounts being needed, and the evolution of equipment and everything, the amount of copper you could get, is of course, dependent on the price and the trend in mechanization and mining methods and everything. But if you take the price of copper in the depression years of the '30s of twelve cents, and look at wages, which were then, well, out at Bristol we were payin' four-and-a-half a day, and look at what a miner shift costs you today, a man on your payroll today, with his fringe benefits and the cost of the equipment and everything that you supply him with, it runs about forty dollars a day. So, if he's an underground miner, which we had out at the Bristol mine at that time, he's gonna cost you thirty dollars just for his wages plus incentives that you'll have to dangle out to get him to work underground any more. So, if you take four-and-a-half, or take five dollars into thirty, that's six times, and six times twelve is seventy-two. So copper should be seventy-two cents. The difference here is, of course, that copper's mostly, mined by open pit methods. But some of these mines, some of the big ones, are now going into underground mining with caving methods, back to the underground method, because there's a limit to how deep you can dig open pit. Well, in other words, the price of copper has not escalated in real terms, very much.

I remember when we were operating the Bristol mine and shipping direct to the smelter (and some of our ore was pretty good in copper), the price of copper drifted up to

about seventeen cents, when Mr. Roosevelt came out with a statement that it was too high [laughs], and then the price was reduced back to about twelve, and we were madder than wet hornets [laughs]! Because, you know, our operation was on the ragged edge all the time, like most underground mines were anyway.

Well, the point I'm making here is that the prospects of finding more, of any mineral, in a mineral province like— we can turn to Nevada. We're in a precious metal province, which history has proven. We have, in Nevada, a lot of scattered precious metal mines, gold and silver, and some of 'em combined gold-silver, some of 'em straight silver, some straight gold (almost). They're not generally—most of it has not been in base metal mines, although Eureka, Nevada, of course, was a lead producer. And the Pioche area turned out to be a lead-zinc producer. But the early production was moderate amount of lead with high silver. And, of course, the Comstock was gold and silver, silver and gold, whichever way you want to put it. And then, of course, [gold and silver] Tuscarora and Midas; Tonopah straight silver, and so on and so forth.

Well, we are then, in a precious metal province, and it's been shown that when you have more or less what you might call a parity price for the precious metals, that they'll be produced in that province. But, when the lid has been held on them, which, say, as everybody knows the price of silver and the price of gold went through a long, long period of static price because of the amount of silver that was already above ground in coinage, and with the government's policy of buying silver for years there, with the express purpose of helping out the western miner, and then came right around a few years later selling it off to hold the price line, because other people had the ball. The western miner, in the earlier

years, had his politician goin' back fightin' for him, like Pittman and McCarran, those fellas. Later on, we had nobody that took the attitude that it was the precious metal part in our ores that kept us healthy.

In fact, the western miner joined up with the base metal producers. The people that were—in fact, my own boss, for a period of time in the late '40s (not my boss at the time, but he was heading the company that I was working with, Mr. Snyder) was very closely allied with Mr. Howard I. Young, a personal friendship and in their efforts to benefit the lead-zinc industry. And the point I always made is that Mr. Snyder didn't recognize that he was not a zinc producer. He had to have the precious metal in his ore, of somewhere near a parity value, before he was in the business of zinc producing. Whereas, the American Zinc Company, back in Tennessee, in those mines back there was in business at a price that with a constant precious metal price that Combined Metals was dead with, you see?

So, in fact, in 1958, I wrote an article (while I was still working for that company, and I was, at that time, general manager) that I think Mr. Snyder sort of resented, but it was the truth, and I've got a copy of it I'll let you have, stating this position. In fact, Lou Gordon published it in the Nevada Mining Association Newsletter, and I was quizzed rather intensively I remember, by John Kinnear, when I came over to one of the meetings of the Governor's Advisory Mining Board. Lou had put this in the newsletter, and John Kinnear was trying to see what my thoughts really were on this subject. I mean he wasn't critical, but you could tell that he wondered if I was right in taking that position.

Well years 've gone by, and now, after all these years (that was in '58, and here it is '75), we're just now coming around to where the precious metal value in our base metal ores

of the West are beginning to put 'em back into a healthy position in the marketplace. And it's taken that long for the natural evolution of events. Instead of the government sitting on its silver, which it could've made a tremendous profit on, by just sittin' on it, it dumped it on the market. And it's pretty much exhausted now. I think some of the statistics I saw show that there are probably four hundred million ounces of silver in coin, and the fact the futures market in coin (bags of coin), is, according to some experts, soon to be terminated, because there just won't be enough coin to carry on a futures market in bags of coin. The answer to this seems to be that people that have the coin are holding them in their mason jars or wherever [laughs] they have 'em, and they're not comin' out with them. In other words, there isn't to be an awful lot of coin melted down any more. And that is one of the sources. The recent relaxation in India of restriction against selling silver is now said to be one of the things that's holding price back, because for years there was a law in India against exporting silver. And of course, I think, as a matter of fact, some of the experts say that the law really had very little influence, and probably relaxation of the law won't escalate the amount of silver comin' out of there. But, you have to wait and see. And there is, probably, a lot of silver in India, but it's mostly held by small individuals with a small amount, and it's maybe a life savings, and so forth. And with inflation like it is in those countries, it's their protection that they're hanging onto pretty tight.

Well, I guess I've talked enough about the influence of the precious metal situation in our western mines. But, this has been a thing that I've taken a keen interest in. And one of the first things that I did, in coming up here, was to take the spare time that I could find and write a little article in 1964—the economics of

price of silver versus wages and production in Nevada. I'll give you a copy of that.

We're in the middle of discussing the Association activities. And in the Association activities, I think the most interesting part to me, was my attempt to spread the gospel [laughs], you might say, of what I've brushed with in my experience in the field, all the way from doing a little leasing and promoting properties on up to running a moderate size company, and acquiring properties and things like that for the company. And I've seen a lot of these things first hand that I recognize, if I hadn't been over that trail, I wouldn't know about. And it bothers me really, to think that we've gone into an era now where all important decisions have to be made by these people that don't know anything about it. And when they talk about restrictive legislation here in the state of Nevada on lobbyists, and on people that get elected to public office, not having what they call a conflict of interests, where're you gonna get the people that know what they're talkin' about in these jobs, if you don't have people that, in that sense, couldn't be identified as having conflict of interest? Are you gonna go over here and get some young fellas that haven't ever had any experience at anything so they don't have any conflict of interest, and then put them in the jobs? I dread to think what'd be like. So, this is—I think of it as the biggest problem this country has, is in that very area.

And with all the horrible things, that came out of this Watergate thing—and I'm not excusing what was done there in any way, when I say this—but I'll tell you that I do believe that most presidents coming up to Mr. Nixon had done things that could've been spread through the news media in the same damn way that that was, and you could've built a bonfire out of the script on it, on *many* things that've happened through the



years. And it bothers me, it bothers the hell out of me, to think that—. Well, one of the things I like to point out is, the news media, under the present philosophy, maintain that they're entitled to keep any secrets from—you know, secret information in order to get the information, why they should be permitted to keep the information secret, their sources secret. They can have the secrets, but the president of the United States can't. Well now, in what part of the history of the world have we ever had such a situation, and gotten anywhere? I'm not a defender of Mr. Nixon, but I was horrified really at watching how tremendous a problem was made out of that episode. I just can't understand how it did this country any good. Maybe it was a good thing to get him out of office. Maybe we got a lot better man now that wasn't elected. I don't know [laughs]. But, that's just cold turkey, statin' my feelings about it. And most people would be on the other side of the fence from me, I'm sure.

How do I set up a lobbying campaign? Well, now, first I want to explain. This is a non-profit institution here. It's incorporated as a non-profit institution. We do not spend any money on lobbying. And we don't. Nevertheless when they set up the regulations out here at the legislature, I had to register as a lobbyist, so-called lobbyist, under the rules, because I was there representing, presumably, the mining industry. But, under the IRS definition of lobbying, we are not lobbying; we are not spending any money on lobbying. But, the way that you try to keep things from getting out of hand, in working on a piece of legislation, I found (and I wouldn't be a good lobbyist if I tried to be a real lobbyist, this wouldn't be my thing at all. I wouldn't know how to work under cover and do things, so forth). But, what I always told them, and they always laugh at me, that I just hang

around there so if anybody wants to ask me a question, I'll have the answer, and try to be low key, and just there, quite a bit. And when a certain piece of legislation comes up that I'm opposed to, show up in the committee and say why the Association would oppose such a thing, based—not because we're not a profit making institution, but in general terms, this is either good or it's bad for the mining industry and why. But then, I found, and have found, that the best results that I could achieve, in working on these things, was to work with the other people who called themselves lobbyists. In other words, the other industry people. And, not only that, you don't withdraw from working with those that are against you, generally, because maybe sometimes you can convince them. Like the League of Women Voters are not as bad as they start out sounding, you know, because they take a position and then from there on maybe they're trying to defend the original position, and so they're slanted to the degree that they already took a position. But, you can moderate that position at least, see. Because you can come up with—. Just like I was saying with Trevillya. She starts out with a position, and I don't have any doubt—in fact, I could detect it later on, in later sessions— that she was moderated to some degree, you see [laughs], because the impossible can't work, you know. So, you work at it that's all. And you appear. Now this last time, I appeared very little, because I had a set-back [heart attack], you know, right at the beginning of things. I didn't get out there as much as someone should. But, anyway, there was somebody there handling it.

But that's one of the functions, and it, of course, only comes every other year for a session period of time. That period of time seems to be gettin' longer [laughs] each time. And in between you're constantly, almost



constantly, concerned with all that stack of stuff you see around here [waves over desk]. About half of it is American Mining Congress. And then there's a lot of stuff coming in here all the time from others like the small miner group, and the Exploration Geologist group, and people. And we have— another function of ours is to meet with people who come in asking questions, tryin' to find answers for 'em, and so forth.

And then, I don't know whether I said this, but the job that I took was based on my having time for my own consulting practice, which I've used very beneficially since coming here—that is, beneficially to my income [laughs]. I had to have something beside, because I've never worked for any outfit, including the present, where there was any outfit, including the present, where there was any retirement setup, or any basis for that. So, I've been, and I think fortunately, faced with providing my own and enjoy doing it [laughs]. So, from the Bristol days, this was a relatively small mining company that encouraged Jack Buehler and me to have somethin' goin' on the side. I suppose some of the officers of the company were hopeful that we'd bring somethin' in that they'd be interested in. When it came down to the test, they weren't interested, so we went ahead and got somethin' goin' anyway, which gave me a start. I had a little bit of money to play with these other things, ever since, and it's been a lot of fun.

And then in recent times, since 1968 (that was four years after coming here), the company that I'd been with, the Combined Metals Reduction Company, in its joint venture with Steen, with the Grand Deposit Mining Company and Charlie Steen, ran into extreme difficulties at the time of the copper strike. And they owed quite a bit of money at the time. And thinking the copper

strike would be over, why, they kept on mining at the Pan American mine, that they had under lease, and milling at the Caselton mill, and dug themselves in even deeper with creditors. And the copper strike lasted eight or nine months, whatever it was. And they were in serious trouble. And so some of the stockholders and creditors put the thing under receivership, and they twisted my arm and made me take the job of being the receiver for the company, under a plan of some kind of reorganization. So right away we had—well there's no use, I guess, reviewing the history of this thing, but this was quite an education in how these things go in the courts. And I had a CPA accountant in Salt Lake, Mr. W. La Monte [Monty] Robison, the attorney in Salt Lake, Mr. William C. Fowler, who the court recommended, under the federal court in Las Vegas. Mr. Foley, Roger Foley, Jr. [Roger T.] recommended Mr. Fowler, and so he was appointed. Of course, I didn't know who to get. And I tried around Reno to find somebody, and some of 'em had been involved with the Steen's operations before, and considered themselves disqualified on that account. But I got a good recommendation when I picked up Jack Berry to be the Nevada attorney. And he's been very good. And so I've worked with those two attorneys, and Monty Robison the accountant. And it was eventually transformed into a Chapter Ten proceeding, under the Bankruptcy Act, still allowing reorganization.

And, under that procedure, we *have* gotten the Caselton mill (which was regarded as the principal asset of the company) activated by some Canadian people. And the mill is now running, and they're paying royalties, and gradually creditors, obligations of the trustee are being paid off. I'm not the trustee any more, since getting the mill activated. I asked the court to let me out. I'd been with it

for six and a half years. And I figured that that was the principal thing I could do, so now the accountant, Mr. Robison, is the trustee. But, it's still in the federal court, and there's a ways to go before the creditors are paid off. So I've been involved in that, and I am now called on as a consultant in the matter now and then, and spend a little time at that.

so, at my present age, being born in 1907, I'm tryin' to unload a little bit, and I'm now talking about getting somebody else in this position, getting the Association to look at this, and I think they will pretty soon. Then I'll step to one side. I'm hopeful that they'll give me a free office here next door where Roy Hardy was, or one or the other. In fact, my secretary has said, and we—. I'm not supposed to talk about her, because she said not to. But I'll say this much—that she told the directors when I talked about retirement, after I turned sixty-five, that she was not about to break in a new executive secretary [laughs]. So they haven't let me quit. So I've been tryin' to find a way of not totally quitting, but take social security, and take whatever they can pay me, without reducing my social security, and then step to one side and be—. If they want to call on me now and then for some help in breakin' in somebody, okay. Maybe I'll put that over, I don't know [laughs]. I don't think I'm really that good. The job is a public relations job, primarily, I guess you'd call it.

However, I'll say this, in my estimation, it'd be difficult to put somebody in that hadn't had a reasonable amount of experience *in* the mining field, you know; and especially for a state like Nevada, where the precious metal side of this thing is so important. And there is a conflict, I think (and I've detected this right along), between the metallic miners and the nonmetallic miners—not a conflict, but there isn't the same understanding about the importance of the 1872 Mining Law,

because a lot of the nonmetallic minerals are under a leasing system anyway, and some of the others that are in gray line areas, could be leased without completely upsetting the prospect of makin' it pay. And of course, if the objective of the federal agencies is to create more revenue out of the production of minerals—who pays for it? The public pays for it anyway. It's just another way of taxing the people, and especially now.

This is a point, too, that people don't generally recognize, that the cost of our domestic minerals to us, is determined by the cost of supplying it domestically, because with the backward countries or the developing countries that have richer deposits, especially in the metal areas like copper, lead, zinc, and gold-silver—of course gold and silver are in a different category entirely; but, the base metals—those countries are gonna hold their price up to what it costs us to produce for ourselves. This is already illustrated very well by the oil picture, and we're not gonna be out of this reliance on Arab oil until we're able to supply our own. That's pretty doggone evident. And its the same thing now in copper we are self sufficient, virtually self sufficient. In fact, we've got new properties on stream that are planned for, and being brought into production, ahead of our present requirements. But present requirements, of course, are in somewhat of a depressed situation. And, there's no question but what the additional production is going to be required down the road a ways. So, it's absolutely impossible to strike an exact balance on any of these things.

So right now, you find the major copper companies are curtailing their production, because they build up a supply of copper, refined copper, overhanging the market, and there's nothing they can do but stop feeding it; and especially when the price has dropped to

where some of these operations are marginal, you see? But, it's a difficult thing to come up with any balance on it. Nobody's ever done it, and I don't think it will be [chuckles]. You're escalating up and retreating down, and I think it's gonna be probably even tighter because when these backward countries (or the "developing countries" may be a more polite phrase; is it?—[laughs]) are so irresponsible that you can go in there and spend—an American company can go in there and spend tremendous amounts of money developing a property, and then they expropriate it. They've got richer copper ore. And they've got sort of a control on the market in that sense, but, of course, they haven't got the efficiency that our American domestic producers have. So we're gonna have to rely on what it's cost us to get it out of our own ground. And that goes, I think, for the other base metals. And when that cost goes up, well the price goes up.

And, of course, the cost, you always want to remember, looking back at that chart on silver\*, is a relative thing; cost in dollars is one thing, cost in constant dollars is something else. If you put the inflation equation into the picture, these costs haven't escalated like people talk about, in dollars. They haven't escalated. The cost of copper in terms of a man's day's pay has stayed virtually constant. They're getting into lower and lower grade ore; producing larger and larger quantities. And yet they're holding the line on *real* cost to the consumer. Because the consumer, we assume, has got his income escalated, along with the rest. Unfortunately, there are a lot of people that are not going along with the escalating wages. What the answer is there, I don't know. But, we've got among the black community, I understand, there's twenty-five percent, or something, that are unemployed, while in the white community it's about eight or nine, somethin' like that.

This gets into an area that I think our whole policy has missed the boat on. To say that we have abused them is not the right answer. I think the right answer would've been, and still can be, that the black people, through some of their leaders that are educated well enough to understand this, could take the ball and have their own development. Just come right into the marketplace and compete on building houses and on doing everything else, instead of saying, we're gonna mix you up with all the—you know, government force a mixup of races just for the purpose of mixin' 'em up. I think if I were a black man, I'd go out and promote an organization of all black people, and come out and show the public what I could do, building houses and everything else. That's the answer. Well, that's my attitude [laughs]. That's my feeling in the matter. I think we've kind of missed the boat in trying to tell the unions, you've got to have your percentage of black people. I don't think that makes much sense [laughs].

Getting back to the Association things for just a couple of minutes here. I mentioned Governor O'Callaghan's attitude on mining and environmental protection and so forth, and his helpfulness to the Association. What about the other governors that I've worked with? Sawyer was very helpful. Sawyer went to considerable pains to, you know, go to Washington or do this or that, when there was some special problem in the mining industry.

I think when Laxalt came along, as a matter of fact, this was at a time when the environmental movement was going great guns. And there was a case or two where we kind of expected him to take action that he didn't. But, of course, he's our friend. His

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\*See Gemmill Papers, UNR Library

attitude and the things he's expressing right now as the United States senator, sound very good to me. He's very, very outspoken on the conservative side of the fence, and that's where the miners belong. And, of course as you know, he's coming out promoting Reagan, and we like that. We like Reagan. I think generally, you can understand that a miner, especially a small miner, is necessarily an extreme individualist. Right? Just like a farmer. You know, the guy that's out—actually out there raising some crops.

I've got a very good friend down in Lincoln County, Chet Oxborrow, who I've been dealing with for years in that valley out there. (He told me, just the day before yesterday, the potatoes are up that high [three feet, gesture] in that whole thing. You know, I made a deal with him, and he's got a potato man from over in southern Utah that planted a big part of that valley with potatoes, and using the wells that I had drilled and developed and so forth. He says it looks awful good.) But Chet, he's not a college man. He's just a hard worker, and boy is he good [laughs]. Good at work, and good at thinkin' too; and very much a conservative. So, I think the farmers, the ranchers, the miners, cattlemen, sheepmen, are all pretty much in the same frame of mind about government and policy, and so forth.

But, we're very much in the minority as far as the masses of people are concerned, because they're squashed into these population centers, and understand very little about what goes on out in the wide-open spaces. More and more, it's getting to be a tough problem.

Congressman Baring always went out of his way to speak on behalf of the miner and the minerals industry. There was one place where he kinda misunderstood a little bit— when he was critical of the miners for not taking advantage of going into some of these proposed wilderness areas, during the time they had

(until 1987), to develop mineral deposits that might be there, when he'd fought to get that open access period into the law, you see. But he didn't understand and it had to be pointed out to him later (I don't know that he ever did understand) that just to have that deadline laying out there and the fact that the area might become a wilderness area in itself, was enough to discourage ya even if ya had that right. Why look there? Go somewhere else and look. And that's what happened! People did what came naturally, you know. [Laughs] That was one area that he didn't understand too well. And in one of the Mining Congress speeches, he got up and made quite a statement out of the fact, even though they were allowed to do this, they didn't take advantage of it. Well, I kind of chuckled at that, because I could see the other side, and saw it all the time. But, he was, as I say, easily approached to go after what was needed by the miners; and he did sit on committees that could hold the lid on bad things.

One of the things that came up during that time was the Great Basin National Park, if you recall. It was proposed, and Senator Bible was working for it. And the ranchers, and the miners over there, myself included, were very much opposed to it. And of course, it came through Congressman Baring's lap, and he stopped it! As you know, Senator Bible was in a position to promote national parks and things like that, and recreation areas. And he had committed himself on that previously. I'm not blaming him. I just say that he thought (and in the initial stage, I thought!) that the national park was gonna be a good thing for the area, until I got to diggin' in, and the ranchers and other people over there got to explaining what it would mean, and what the restrictions meant and everything else. I switched my position. That was before I was with the Association however. I was just with Combined Metals at the time. I went up and

attended some hearings, and worked on that. But Baring stopped it cold.

And then you asked about Howard Cannon. Howard Cannon has been good at answering letters. He hasn't been on the committees; you know, like our congressman usually gets on the more important committees where this land problem starts you know what I mean?

So, Towell was cooperative, and came out holding hearings on land lockup and the Organic Act, as proposed that had some bad things in it, from our viewpoint. And we gave testimony on that. And so I'd say he was cooperative.

And I think our present congressman, Santini, is showing some signs of cooperation. There was one thing came up that we were opposed to, and that was, as going by the position of the American Mining Congress, this office—one of the things that we're instructed to do is to weigh it carefully, and unless there's some reason why we shouldn't, in this particular state, we support and go along with recommendations of the American Mining Congress, the mining industry lobbying outfit in Washington.

Here's a case in point. The position the State Committee on Federal Land Laws, the majority of the State Committee (which I was a member of during the PLLRC and also at the present time—still a member of the governor's new, well it's a new committee; the old committee was terminated with the PLLRC report, and a new one was set up by O'Callaghan directly reporting to the governor, looking at the federal land laws in relation to Nevada), and the position of the committee was that this state should go after the federal help in land planning, vigorously. And in the early stages of deliberations, I was not personally taking an opposing view to that, providing that the state—of course, you

know these pieces of legislation can have the same tag, have the same general objective, and when you get down to the detail of it, it can be either a good thing or a bad thing. So in general, I was not opposed to seeing the state go after federal funds in land planning. After all it's eighty-six percent federal land, and if the state were able to include the federal land, and if the state were able to include the federal land in its land planning process, it'd give us a bigger, you might say "hold," or a bigger "say" in what's done with the federal lands under the state agencies, which in my opinion, are far better for the purpose than having the problem shipped to Washington, and having them impose Appalachia on us, you see?

So, I was not opposed to that idea for some time, until it got down to actual legislation that was being proposed, and being opposed by American Mining Congress with some rather careful analysis. And so about that point here a year or so ago, I turned around and took the opposite view, because I was convinced, and the Association membership was convinced that, you know, American Mining Congress position was correct. And, so it's come down to a quite recent thing, where in opposition to the passage of the most recent bill on land planning, the Congress, or the House, barely defeated the bill. And Mr. Santini wound up on the side of passing the bill, after we'd written him our position and so forth.

We got a very nice letter back from him, just a few days ago, I mean a week or two ago, in which he went to considerable length in explaining why he voted for the bill, and explained that, of course, to begin with, Governor O'Callaghan is for it; and a lot of the things that were originally most objectionable, in the way of the federal arm-twisting provisions, had been eliminated, and he saw the bill as a good bill. Well, this to me, was a good indication: because he took



time out to write a two-page careful letter on that particular subject, and I don't think, for Nevada, it's a critical issue, like some of these other things. These other things, I think, we'll have him on our side. I think he's listening. Now, that pile of things\* that I gave you there, I bundled up a pile of things like that, right after he got elected, and sent them to him. And I got a nice acknowledgment back, in which he said, it was very helpful for him to understand more about the mining industry. So, I do expect him to be payin' attention. I think he's shown that he will. And as some of the small miners' groups have told me, they've met with him, and they were pleased with his attitude. So, who else are we talkin' about?

Our relationship with Senator Bible, in that particular case of the Great Basin National Park (I think they called it) was just one thing. Other than that, I have to say that he was—when you really got a problem and brought it up to him, he'd come in and defend your position, but you had to really *get right to him*, you know. He was an awful busy man in a lot of other areas. And of course, being a senator is quite different, I think, than being our lone representative in the House, because the things that relate to us mostly originate and have to get through that House. And the Senate is a different kind of a body. I don't know. Their heads are more in the clouds I think [laughs]. Well, it's what Wayne Aspinall expressed. He was the chairman of the Land Law Review Commission, and he has met with the state committee on federal land laws a couple of times; and he made the very important point, and I can agree with him, that the House is the place where the work is done, and the Senate is the place where, well, they wait for the House to do the work.

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\*See Gemmill Papers, UNR Library





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CONCLUSIONS

## PHILOSOPHICAL REFLECTIONS

You see I've got a notebook here? And starting in, oh, a number of years ago, I'd once in a while make a little note to myself, that otherwise I'd have forgotten, about some of my ideas, philosophy, if you will, and once in a while something that I thought was a little funny. And my sense of humor is very good for me, but maybe it isn't very good, as far as making an impression on anybody else, but I think when a person reveals what their sense of humor is like, then they reveal something about themselves; and maybe a little bit about their experience. Right? And so, I'll start in by being a wag. I am a wag, and I'm always buggin' people with my rather poor sense of humor, because I believe in mixing up words that—. You know, this business of, well, what do 'ya call it, puttin' the wrong word in the right place because it's a similar word, or somethin' like that. So here goes.

First of all, I'll talk about bein' a wag [laughs]. Then maybe I'll get into—if it isn't

too far out—I might get into a little bit of somethin' serious, you know.

Now in this notebook which I've started, "Philosophical Ref lections," in 1962, there are some things that I find go back of that time, but they were old notes that I ran across somewhere or other, and put into this notebook. And, as I say, the notebook was started on my fifty-fifth birthday. And one of the first things that I put in was a serious observation, and it's rather a roundabout way of saying a simple thing but: "Man blinds himself with his own handiwork, which once created, his ego must hold up to view whenever the subject's brought to mind." And I—that's a— first thing I put in it then was something serious [laughs] But, shortly I got to this point:

"If at first your try goes plop,  
give the thing another prop.  
Then if you cannot win the race,  
why not see if you can place.  
But if a failure you must be,  
remember dogs don't climb a tree."

The above was composed for Tamby on a trip to Arizona— that's our daughter, who was then, in 1962, seven years old.

Then in the early 1964, on a trip to Pahrangat Valley in a Chevrolet wagon, a sideswipe of a highway post ensued, when composing more and trying to jot it down in a small notebook, while driving south through Panaca Valley. Verses are, [laughs]. (This goes on with the same jingle:)

"Best avoid and not repeat,  
the things in which you met defeat.  
You *can* avoid those sticky messes,  
by repeating past successes.  
Most men making bad mistakes,  
think they had the worst of breaks,  
and when they see their money's gone,  
they find someone to blame it on.  
Now if you think my verse is corn,  
remember dogs are not great poets born."

[Chuckles] Is that okay? [Chuckle]

Now here's more like a miner's viewpoint— going on with being a wag—and I guess this must have been during my sixtieth year. And I haven't jotted anything down in this notebook for a long, long time, 'cause when I came to this office, and repeated a thing or two that I had in my notebook to my secretary, she pretty quickly closed me off. She didn't want me [laughs] goin' on bein'—[laughs]. So.

"When your head longs for  
what body can't do,  
the young man's pleasures  
are not for you.  
Now don't get me wrong,  
for I still feel quite strong,  
though I'm twenty and twenty and twenty.  
But as time passes on,  
while my zip is not gone,  
just a little for me is quite plenty.

The advice that I am giving to you,  
when you find that your youth is all  
through,  
and a slow down in pleasures must follow;  
just slacken the pace,  
for you can't win the race,  
but you *can* be a jolly good fellow.  
Now I say this because  
if the strain gives you pause,  
but if you for pleasures have taste (I  
twisted that)  
you can turn to the things  
that older life brings,  
and savor the good things with grace.

Okay. Well that's my extent of tellin' you that I've been a wag [laughs]. And, most of my jokes fall flat on people, but they give me some pleasure [laughs].

However, I think that it would be a mistake, comin' to this point, if I didn't repeat a few things that I've put down in this notebook. And I don't know—. It might be that some of this would be better just duplicated and handed to you. I could do that. But, I think maybe to talk about it as we go along a little, and take some of the highlights.

In June of, it must've been '55 when I started the notebook, one of the things—little ideas that came to mind was in respect to getting an operation into a smooth-working, coordinated plan of operation that worked, and that you didn't have to constantly watch. The supervisor or the manager didn't have to go around and do people's jobs for 'em, which means, as I put it here in very brief statement: "A lubricated groove is essential to an efficient business enterprise. A rut is a worn out groove." Now, by that I mean that you have maybe great difficulty when you start a new operation or a new plan in a given complex of operations; may have great difficulty getting the right man in the right place, and you

almost invariably have a lot of silly troubles that come happening, because you haven't got everybody organized. And finally, you do get it organized, and when you do (you can look at the largest companies or the smallest), then it's just like a person walking and automatically putting one step in front of the other, one foot in front of the other to walk, and keep the balance while they're doing all kinds of other things, talking or anything else. So if that plan that you got this operation going with, operates long enough, it'll be a worn-out groove. In other words, there'll be others that have gotten the same kind of an operation goin' much more efficiently down the down the line somewhere, see. So you've gotten the—. Although you've gone in smooth working groove in a sense, it may be worn-out, and inefficient. Okay. So you have to constantly watch for some way of turning the groove at a different direction, and keeping it lubricated.

"Old age is signaled by the years of the man, or the organization. It is signaled by the playing of cracked records, goin' over and over the same old trail, in other words." So we as individuals can be in a groove that works fine for us, but finally it gets worn out too.

"Requirement for discovery." This is a thought that I thought was of some consequence. "Discovery seldom requires a reward, but to follow through to practical application does require reward. Put differently, one discovers for the sheer satisfaction of it. Where the discoverer or inventor falls down and fails to capitalize on his ideas, is in the follow-through. This is largely because his nature tends to detract from the importance of the discovery—the inventor feeling at the time, 'There must be a better way.' Naturally, he has this feeling, because without this thought he wouldn't have sought the better way in the first place." I don't

know whether that makes sense or not. It was a thought any way.

And then in a little later excursion ride through the country somewhere, why, I jotted down somethin' else that I I thought at that time was of some consequence: "Man has a need to be needed. In this need, he draws to him those who need him. Sometimes, learners, and sometimes to the exclusion of the most independent. This causes him to exaggerate the importance of what he has learned to do, and to minimize the importance of what others know how to do." I don't know whether that sinks in very easy or not. But I've seen it happen.

And a little later, another one: "Self preservation, the first law of nature, underlies all manner of human action. In plants and animals, we see the raw manifestations of nature's law. But even in animals we see individual sacrifice for the benefit of the colony or of the family. So this is not a distinguishing human trait. Yet, the first law is manifest in purely human motivation. Indeed, the highest form, the greatest of all purely human endeavor is surely motivated by the first law. And the endeavor is the preservation of the inner man. Then the most intense and exclusively human struggle, is the exertion of each man within himself to be human." And then I changed that a little bit. But anyway we'll go on. "The battle is never won, but never lost. For each of us, the measure of our success in living, cannot be scored by any other man. The terrain, the intelligence, the odds of force, the will to fight, and the satisfaction in victory are all concealed within each individual man." Then I said something else that was supposed to go on the end, and I had it back in the other part of this. "Exhibitionism, essential to primitive man, has contributed uniformly to the social system." And I also said, "The exhibitionism 'bit' should probably

be removed from where I had it and put at the end.” Anyway, that, probably could be dressed up a little better.

“To discover a liar for material gain or for its companion, popular acclaim, is to discover a man who is unaware of the battle that exists of human supremacy over animal instinct.” That was all of that one.

“A wise man does not report for long to one who does not promote his growth.” That’s a very important one, I think. That’s one of the things that I tried to lecture every young fella that came under my supervision, that and the habit of being a saver. The two things are most important to getting ahead in this world and to being happy with yourself. And very often you see people that have a tendency to turn to those that know less than they do and associate with them, because it seems to—. They think it boosts their ego, I guess. But I think it just works to create more dissatisfaction in themselves. And if you’re, if you’re attracted by the fella that knows more than you do—and there’s always plenty of ‘em that know more than you do—now you don’t have to admit that you’re not a “super human being at the same time, because there are a lot of areas of accomplishment and knowledge and everything. So you have to start out by admitting you can’t know everything. So you can always pick out somebody that knows more than you do, in some particular line, at least—even if you are an egotistical so-and-so [laughs]. Well, I think it’s a very important thought, and I think it can contribute to progress for the young fella tryin’ to get ahead, if he really would swallow it and think about it.

“Confusion results from an inability to define objectives and separate the elements of an overall problem. Commonly, personal drives are at cross purposes with business objectives.” And when I was lookin’ at that, I

was thinking of some particular individuals that I knew.

“The fool never learns by experience.” This is from an old notebook that I found somewhere back in 1935—a ‘35 diary that I started to keep before I kept a permanent diary. From about 1937 on, I had something down for all the time—usually just connected with business, but very seldom that I wrote any of this kind of thing in it. But here was one that I had in this old diary: “The fool never learns by experience. The average man learns by his own experience. The wise man learns by the experience of others.”

And another one at the same time: “Make gay with your own crowd, else you must be immune to insult.” I saw some things happen out at the Bristol mine where some of the ladies that were really pretty nice ladies were present at parties, and some of the rough miners were sayin’ things [laughs], and so, would you allow that to make a fight or do you just blame it on associating with people that you shouldn’t be associating with if you don’t like it [laughs]? Am I right?

“Those with the success ahead of them must now be looking to the future. They have little time to be reflecting on the past?” I don’t know. I think a lot of this is not worth much. “For me to go fishing today is urgent, but to plan good, clean recreation for boys and girls is important. So one might delegate the fishing to the boys and girls, then go along to keep them company.” I thought that was all right [laughs].

“Everything is accomplished in mediocrity.” That is a quote from Mr. Sam Farnsworth. And then my addition to it is this: “And the thinner you spread yourself, the more mediocre *you* become.” And when Sam Farnsworth was saying that, and I threw it back at him several years later, he said, “I didn’t know I’d ever said that.” [Laughs]

“Everything is accomplished with mediocrity.” But on analysis, I considered that statement quite important, because I found, in my experience, that there’s very little difference in a practical way, in the mental capacity of different people that you run across. I mean they’ve all got the same mechanism in their head that I’ve got. It’s a matter of how they use it. And you can take a fella that’s been a complete flop in one area, and if he got set on the right trail, and went through the right steps, in performing the job you want done, and then consented to go ahead and do it; he might be a very mediocre person in your view, but he might be a top man in that job. And I’ve found that very true— that—finally after he’d done enough of it, you can learn a lot from him [laughs]. That’s right.

One of the big fallacies in this mining game—and I think it shows up in the mining game maybe more than in a lot of other places—is that advanced education doesn’t make a good miner. And, in fact, advanced education, I haven’t found necessarily made a good manager—of a crew of men, you know. In other words, you have to know the different phases of the operation and all that, but the biggest engineering problem, and particularly in running mines in out-of-the-way places where you have to do a lot of things like even setting up your camp, and all the phases of the operation, and then going on to make it work and get it into (what we were talkin’ about a while ago) a smooth working groove, the biggest engineering problem is human engineering. In other words, the ability to appraise what the other fella can do and put him in the right spot is what I call or what Mr. Hoover used to call, human engineering. And human engineering, I think, is what makes an operation go, because a man has been around a particular type of operation long enough and understands the necessity

to look for the man that knows—and not necessarily your own knowledge that you’re applying. You’re applying the knowledge of others—a very important thing because I’ve seen many, many cases where a man has the idea that he’s got to make people think that he made all the important decisions, and this can be disastrous. It disrupts the whole crew; those who had some good ideas and had to come in and expose the idea, and then be told a few weeks later that the idea came from the boss— it doesn’t work very good [laughs].

“Frustration is avoided by understanding one’s animal instincts of territory” (and this is getting pretty long hair, I warn you), “by understanding one’s animal instincts of territory, status, and sex, while meeting the civilization requirements of religion (constitution), morals (bylaws), family ties and friends (organization). It appears to me there is surely an instinct of the supernatural, which must be as powerful as any other instinct. No people have been found, no matter how primitive, who did not have something akin to religious belief. Tracing this back into the animal world, reliance on a power beyond the individual’s experience and knowledge is found on every hand.” So that’s a brief statement on my feeling about religion and I have probably more that I might add to that a little later. But then I come to some headings here:

#### AGE

“In age the flagging memory or flagging interest is prone to reject new ideas, since habit must replace learning and imagination (because of the flagging memory, of course). And realization that the end approaches does promote dependence on the status quo.” This is why, in many cases, it’s necessary to put a man out of his job when he gets too old or



starts getting where he must depend on the status quo, because progress and evolution means that things are changing all the time.

## **FREEDOM**

“To become a free man, you must first of all, acquire self-reliance. You must recognize your weaknesses, yet be the master of them. You must not be dominated by any man, yet remain the servant of mankind. Freedom breeds confidence, not arrogance. Freedom is a manner of thinking, and cannot be bestowed upon”—and I first put “man,” and then I put up above it, “a society,” “nor can it be taken away except in the physical sense.

“Freedom is a most elusive attainment for it is not licensed, and it cannot be bestowed upon anyone. No man knows freedom who has not learned to guard first against himself—in the final analysis, the only real slave master.” When you look around you see most of the people on the street are slaves; they’re slaves to their job; they’re slaves to somebody that’s dictating what they do, and they feel this. They feel they’re slaves. I think the young people today—one of the biggest problems they have is that feeling of frustration because they have not been brought up from early youth to take on a feeling of responsibility, for themselves. Right? And they’ve been allowed to just drift and suddenly they get to be men, or women, to be grown people, and they haven’t come over a trail that gave them any feeling of self-reliance, and responsibility. Why shouldn’t they be all confused? And I think our whole society—and particularly the union and labor groups, so-called labor group, the labor group leaders—have been very much responsible in this area of preventing—in “child labor” laws. They’ve prevented a lot of things that were taken for granted as people grew up on the farms in earlier periods of society. And I

think it’s disastrous. I don’t know how else to call it. I don’t know whatcha can do to turn it around either.

## **ATHEISTS**

“Those who call themselves atheists are made by dogmatic and fanatic religionists of narrow belief. The open mind of free men must see the whole within their power to grasp its meaning.” I’ll repeat that with a little different emphasis. “The open mind of free man must see the whole within his power to grasp its meaning.”

## **RELIGION**

I guess I’d thought what I said before wasn’t complete, and I must have done quite a bit of thinking about my religion at some time or other. And I think I still do. I have a—I think I have an open mind in that respect. And maybe this reflects kinda what I think. And I, I don’t mind exposing it to anybody that wants to know about it.

You cannot deny the truth of an instinct. (An instinct is there whether you want to say it’s there or not.) Some form of religious belief is instinctive in all humans. (I’ve said that before.) “No society of man has been discovered without religious beliefs; and back of man, lies his animal origin within instinctive social characteristics that cannot be denied and *cannot be erased*.” (I’d better repeat that, because I confused it a little bit. I was putting it positive instead of negative, and I’d better repeat it like I think it should be.) “The least vulnerable (men) argue that their god is ruler over all life and all things. So by their definition, the laws of nature *are* the laws of God.”

Most vulnerable—I’ll parenthetically add to that here and now—most vulnerable are

those who separate God from nature, and separate God into a channel over here that's operating *under* nature, and that heaven is off somewhere separate from all these other natural places. And there are people who hold to that kind of a belief, and read it into the Bible. I don't. I have very broad interpretation of the Bible. I used to argue with my mother quite a bit, who was much more—. Well, she'd read the Bible with great conviction you know, the Bible had to be right. She didn't say that she could always interpret it right. But, when I tried to argue with her at first on evolution, she seemed to want to take the position: "Well, after all the Lord is all powerful." She didn't have her Lord partitioned over here in a separate place, by any means. But, she said, "He's all powerful and He could make anything appear any way He wanted to." So why shouldn't we just go ahead and believe the Bible that the earth was made in seven days. A day to her, was a day [laughs]! Okay.

Now going on with this other statement that I wrote down. "As to Christ, at the very least"—and I'm not saying that I take Christ at the very least, but I do like to put a foundation under Christ—"at the very least, science must grant that he *instinctively* knew nature's laws better than any living man today." (That's my opinion.) "All scientific research has not found, and is not likely to discover and disseminate, wisdom greater than the instinctive wisdom present in each of us." You get that? "But all manner of misery is lived by those who countermand the dictates of their own conscience."

"Atheism, as a belief to be given status, should be legally denied. It is a categorical untruth to have a belief in the non-existent." Okay? That's my religion [laughs].

And here's—I guess the latest thing I wrote down in here—"One's past keeps returning,

and whether good or bad must be faced repeatedly. Some part of every experience leaves its mark that cannot be totally erased."

That's about the size of it as far as tryin' to review my scribblings [laughs]. But, I don't think that any person is exposed without getting into some of that kind of thing. Do you? I don't mean that you're gonna get other people to think the same way, but I think that some of it comes from experience, and a lot of it comes, I think, from an upbringing, the way you were brought up from way back there. It's been said many a time, of course, that the life style of a person and their thinking is largely determined way back there under the age of—what is it?—six or ten or something. And I think that's very true. But, I'll also say, and repeat what I said a while ago, that even after that time of lit e— and you can do your very best with a person up to that time—and their associations with others around them, and particularly their peers, starts taking over, and it can direct them in a disastrous path, or it can direct them in a constructive path. And I think society today, with our buildup of population centers like they've been, and with all the things that science has brought into the picture and everything, has made it almost impossible to insulate a growing person from all the folderol that's going on around 'em. So I guess you'd be making a mistake if you tried. But, now I'm gettin' into an area that's way over my head. So [laughs]. I don't know what can be done about it, or whether anything ever will be done.

I must say another thing, looking at things as they stack up today, with our high rate of inflation at the same time that we have a business recession, which certainly is the first time that we've seen just this kind of a situation in the financial community and in the country, where even a high rate of unemployment doesn't cure the inflationary

trend. I think if this was restricted to the united States of America, it'd be, I think, cured rather quickly because the world would bring us around; the pressure of what's going on elsewhere would bring us around. But, apparently this is—all the developed countries are in the same boat. And so I don't see how this can be turned around without going into a—. (This is a very pessimistic statement I guess, and I don't feel like a pessimist. But I just, it's the way I see it.) I don't see how this thing can get turned around without going through the wringer. And if we go through the wringer, we've got a tremendous number of people that aren't gonna understand it. And when they don't understand it, they're gonna be impossible to deal with. So, there's my pessimistic view. I don't know.

#### **PUBLIC LANDS VS. MINING LANDS**

I thought, you know, I came along for over many years thinking that our whole financial package lay in the financial handling of our money supply and things like that. But the social end of this thing becomes an overriding importance, because now we've got a new political system. I don't know whether I mentioned this before, but I believe that with the Supreme Court decision of "one man, one vote," we put decision making in the hands of the masses far more than we ever had it before. And then we came along with the television, and the news media, that's so centrally governed and controlled, that everybody, all these masses of people, get the same news release, at the same time, that's put out by the same people all the time—and they're very influential. So when the fella comes home from work, takes his beer, and sits down drinkin' his beer and eatin' his cheese and crackers and watching TV, he gets the message, the same message that all the

rest of 'em are getting. And they're influential enough so that the majority of them believe what they hear. They don't question it. Well, they're not raised, or they haven't been trained to question what they hear. And the pollster comes along and proves that point—that the idea went over. And then, under our political system, the politician has no way to turn but to listen to the pollster. So if you analyze that backwards, you say that it isn't the top politicians that are really taking our problems and handling them for us. The masses of people are trying to handle our problems, after listening to somebody tell them what to think.

So a very short way of putting this is that we have a new political system, if you want to call it that, by putting the word "media" in the middle of the word "democracy." I liked to call it "demediocracy" [laughs]. And the third political party that we don't recognize, and not about to recognize, is the party I like to call the "mediacrats"—those who are being told what to think by the media—and think it—and express themselves accordingly. And the media—it isn't all their fault. People like to hear the far out stuff. They like to hear the bad news. They like to hear all the stories they can hear on violent things or disasters, and that occupies a lot of the news. And so it's a changed system.

As a matter of fact, now this gets pretty far out, but this is a statement that I don't mind making. This country was built as a republic more than as a democracy. The incentives for building the West (if you look back and look at it real hard), the incentives for coming out West and building the West were economic, and they paid no attention to anything but that factor. And the captains of industry did the job by going to the leaders of the country and getting the incentives out of them, and the incentives were very effectual. So that

the granting of vast acreages of land, like you see across the checkerboard ownership map of Nevada of the railroads, things like that were the kind of incentives that were dangled out to get these things done. There isn't any possibility that we're gonna have a repetition of granting incentives like that.

But, after the first phases were over, then the next phases entered a long period when politicians took for granted that the old concept of "to the victor belong the spoils" was the incentive for them running for a political office. Right? I think we have to admit that. And so when they got in office, they felt that they had prerogatives, just through having secured the vote and secured the office. And it didn't take very much twisting in their thinking to do a Spiro Agnew. Right?

But it worked. Now that's the thing. The system worked. And we went through a vast period of growth and success in building up our economy. And you go back to the mining law, and there isn't a better example can be cited than the establishment of a principle out West, that if you discover a mineral showing—and they didn't say a marketable mineral deposit; they said a mineral showing—that a prudent man would dig on, you had a discovery, and you had a right of ownership as against any other citizen. You had no right of ownership against the federal government, because the federal government *did* say you had to have that discovery on your claim, and you had to show discovery to get patent. And then in the early days each mining district had its own rules. And finally these mining districts were sort of evaporated and it became the counties, more or less, and finally the state, and the state law took over, in which it evolved that you had to have a mineral discovery; you had to have—well, mineral discoveries required anyway under the federal law, but in Nevada you had to have a shaft ten-feet

deep with mineral in place. But then the thing that kind of destroyed this concept was the addition of the words that said you had to excavate so many cubic feet. And finally the bulldozer could do that very easily [laughs].

I don't want to leave this discussion without making a very important point of the fact that this caused an awful lot of bad propaganda against the mining industry, although it was a part of the law. And it caused miners and cattlemen to be at odds. And we worked pretty hard to get rid of the idea of having to dig that hole on every claim that you locate. Sometimes in the modern day—(and I'm gettin' maybe of F the subject here in talkin' [about] this. It belongs somewhere else, maybe in the discussion. But I've covered this other philosophical business so—).

Anyway, we had a lot of trouble with these holes being objected to. And you'd go out across the state, and some places where they had a hundred or two hundred and fifty claims or something, and then these holes are a regular pattern all over the country there, where somebody put their brand out there, because they wanted to start in a searching program. They didn't want anybody encroaching closely on them. All of which would have been perfectly all right except for these darned holes in the ground. And the problem in getting rid of that useless diggin' which is not a requirement under the federal law—that you do any digging—you just have to have the discovery. And of course, you don't have to have the discovery until the federal—you haven't had to have the discovery until the federal government had some other reason to test the land, and send out an examiner to see whether you had a valid claim. And so that, for a long period of time, has resulted in the habit of thinking that, you know, you don't pay any attention to whether you've got somethin' stickin' out of the ground or got a discovery.

You just post up your claim, and unless there's some other reason why somebody wants the ground, why you're not worried about it. So, in trying to get rid of that, we went through two different sessions of the legislature. And finally we have come up with a new Nevada statute that requires that you have to identify the location of your claim, and file a map, and pay a fifteen-dollar fee to locate a lode claim, twenty-dollar fee to locate a twenty-acre placer claim.

Of course, all of this is elsewhere to be found and all that, but I thought that this might be mentioned in this little thing, because I've had a good deal to do with trying to get this thing solved. And it's been my responsibility as an Association person to work with the other groups, including the ranchers, and the city and county governments, and the railroads, and with the various people that've been on the Land Law committee of the state of Nevada. I've found that they were all, every one of 'em, no matter who they represented—there was an eleven-man group on the state committee on federal land laws established by the legislature, in looking over the PLLRC (Public Land Law Review Commission) material—and I found there was no problem in the state of Nevada of working with all phases of land use, whether it's the recreation group, or the hunters and fishers [laughs]. All of 'em—when they would get into meetings and understand the other fella's problems and viewpoint—.

And it's, of course, believed nationally, by these masses of people that I was talkin' about awhile ago, that mining just goes out here and rips up the whole country, and you've got to put an end to it. And you've got to make sure that anybody that digs a hole has to restore it, and all this; completely ignoring the fact that even including all the land in the coal fields back in Appalachia (where we have no

such problem at all in Nevada), including that and everything else in the whole United States of America, there's only two-tenths of one percent of land that's ever been disturbed by mining. That's remarkable. And in recent years, even back in the coal fields, most of the land that gets disturbed, and *more* than what has been disturbed (according to the Bureau of Mines statistics) has been reclaimed, and a lot of cases in better shape than it was before it was mined. But, that doesn't—. People don't even listen. I mean the people like the Sierra Club and the bird watchers and the far-outers that're trying to stop anything that changes the environment.

And we even got a law through Congress—just imagine this—that Congress actually passed a law that said, no air quality shall be degraded or be diminished from what it is at the present time. In other words, if you were to follow that law, you couldn't go out here and start raisin' potatoes in a valley that hadn't raised potatoes. Nondegradation of water and air? Nondegradation? We can't do anything. You can't move a person across the country. You can't drive a car across a country road without creating dust and so on, you see. So, this is how far-out it's gotten.

I've for a long time been hopeful that the impossible can happen. In other words, that somewhere along the line, even the masses of people would start understanding this. I'm very discouraged about it, because even with all of our economic problems and everything else, we are still faced with that same attitude. In the setting up of wilderness areas, mining is totally excluded. We've got areas to show that mining has never destroyed anything, and the only thing it's ever done is created an attraction to people who wanted to go and see it—say down in Death Valley, California, or down in the Bighorn sheep reservation down in Clark and Lincoln counties. But,



you set up a public hearing—and the public hearing is supposed to be designed to bring forth evidence of what should be done in these areas. So you have these conferences that say, well, to solve this we'll insist that the Department of Interior have public hearings, or the Forest Service. They have public hearings and gather opinions, and research the thing at the grass roots and that'll be part of the record, and that'll help decide what's to be done.

Well, in truth, I went down to—made a special trip down to Clark County when they had a hearing on the Bighorn sheep reservation to convert it to a wilderness area. And I was one of three people in about fifty that gave testimony—actual testimony before the examiner—only three that even spoke for mining. And there were two that had prepared statements; myself and a man from Phelps-Dodge over in Arizona, that took enough interest to come over to Nevada to appear at that hearing, in regard to the, well, the objection to lockin' this up against anybody even looking for a mineral deposit in a million and a half acres. And all the rest of the testimony and obviously most of the people there were college kids, and women, housewives, so forth. And one of the housewives got up and she was *all* for making this wilderness. She just *loved* to go out there and enjoy this area with her grandkids and so on. And she had one strong objection though, that the directive apparently required that you couldn't get off the road with your vehicle, and she wanted that amended, but otherwise she was all for it being a wilderness area. So you see, most of those people that put in their two-bits worth didn't know what they were talkin' about. They hadn't read what Congress had passed, the law or anything else.

So. And then the booklet comes out that was supporting this wilderness, by the federal

fish and wildlife people, and in that booklet if you know the guideline for a wilderness area, supposed to be that it has not had any development, you know, and that there hasn't been any development— it's a roadless area and all this. So they show in that booklet—I could go out there and get it for you—but I'm only saying this to illustrate what happens—in that booklet they show a road, and a digging out there somewhere that has sort of grown up with brush since it was used, and this is cited to illustrate that the building of roads by prospectors some time back, the roads were being obliterated rather rapidly so they shouldn't be considered. And, no mention at all of the fact that when the test site was set up down there, which overlaps two-thirds of the so-called Bighorn sheep area and the proposed wilderness area, that the government had examined eight different mining locations, and paid people off to get out of there, with the right to go back when the test site might be terminated with the idea that there was a mineral potential, but they avoided any mention of that. I dug it out of the file, because Lou Gordon, my predecessor that had been an examiner on some of those for the—you know, a hired examiner—for the party with the showing. So, when you come up to something like that, that the public is so steamed up over it, and everybody, whether they ever went out hiking or anything else, are all steamed up over it, if they don't know any better, they're all favoring the proposal. “Oh yes. Preserve it. Don't let these stinkin' people take it over,” see. Apparently, we're fighting ourselves, pretty hard.

Really, it's kind of alarming I think. And you know that already the percentage of land that has been withdrawn from mining entry on federally owned public lands, according to statistics I've been reading, they've grown to being—I don't know whether it's two-thirds



of the land—it's over half anyway, totally withdrawn. And the process is going on rapidly.

Well, now we're still on this problem that the mining industry has—particularly it concerns the environmental aspects, which has added a tremendous cost to any new operation, just to comply with the air quality, water quality, and the bonding that they say has to be put up to restore the mine, the property, after you mine in it. And they're still going on the assumption that when you mine, that the mine is depleted, and should be restored to its original—. You know, the mineral's not there any more, so land should be restored. Well now, this has some validity in mining a particular bed of coal somewhere that you can reach with a strip mine. It has a lot of validity in that case. But, in the metal mines, it's not true. The mine, the old mine is the best place to start lookin' for the next reserve; and if you destroy the evidence of the diggings that are already there, you've destroyed the major part of evidence that would be used to find the next ore body. And the fact is completely ignored that market conditions have—and this is especially true here in Nevada—the market conditions, and the price of the precious metals is why the old mining camps have not received, over a period of, well, from thirty-five to forty years—haven't received the attention that they would have had on the basis of parity prices in relation to the early discovery times. Now we have prices coming up to somewhere around the parity price area, and these old camps are getting a fresh look. And if the mines had been, you know, obliterated some way or other, and the evidence destroyed, it'd be far more complicated to have the fresh look. So that's altogether wrong in the metal mining business to require obliteration, calling it restoration. But that shows just how public

pressure becomes misdirected, and it isn't anything but that. It's just ignorant public pressure.

Well, here for instance. We were talkin' a minute ago about withdrawal of lands—"Repeal of National Park Mining Provisions Proposed," and this is in the September 26, 1975 bulletin from American Mining Congress. Senator [Metcalf] Democrat, Montana. Here's Montana, a great big mining state that has the "richest hill on earth," [laughs] you know; and Metcalf—. He's one of our prime targets I think [laughs]. I'm not close enough to "shoot" him, but I'd like to have somethin' happen to him. "Senator Lee Metcalf has introduced a bill, S.2371, that would repeal application of mining laws to areas of national parks systems." Now this, you know, is outside of wilderness; Congress already said, in wilderness areas, you can't mine after a certain date. And all we gotta do is say "no access" after a certain date, and nobody wants to go in there anyway. "Laws apply to areas of national park system, including (one) Mt. McKinley National Park, (two) Crater Lake National Park, (three) Death Valley National Monument, Glacier Bay National Monument, Coronado National Monument, and Organ Pipe Cactus National Monument." Now Death Valley National Monument is one in there that I know a lot about, because I've, you know, had a good deal to do with lookin' at properties down in that area, and it's just wrong. "In addition to prohibiting location of claims in these areas, the bill requires the Secretary of Interior to determine the validity of *existing* claims, and to submit recommendations to Congress as to whether any valid claims should be acquired by the United States. The proposed legislation also imposes a moratorium on disturbance of the surface on any land included within a mining claim in any of these areas for

three years. The Senate Interior Committee will conduct a hearing on this legislation on October 7.” And the hope is, of course, that maybe some of those things will get modified, but it turns out to be a constant fight.

And we have another thing that’s kinda bad. The Supreme Court—and it works against us—heard a case a number of years ago on manganese, and another case on stone, building stone, that finally came to a decision in these cases. And the Supreme Court came up with the ruling that the test of marketability is a reasonable test for the Department of Interior to impose upon a mining claim, for its validity. Test of validity would be marketability of the deposit. And a little loophole might’ve been left in that, of course, the precious metals and high value showings were obviously—I don’t know how they put it—but anyway, they were obviously worthy of development, or something of the kind. But, the attorneys feel, generally, that the decision permits the Bureau of Land Management, and Forest Service, and the agencies that do control this kind of thing, to place a test on a claim where you have to prove that what you have there is marketable today, at the time of the test, or the claim is not valid.

Now, just imagine the fella that finds a good-looking showing of silver or gold in 1945, and he locates it, and expects to be diggin’ on it, and expects the prices to come up someday (like I always felt the price would), and somebody comes along and tests it, and proves that he can’t market it at the time, so he hasn’t got anything, and he’s lost his effort. Then the answer to that’ll be that once they’ve taken it away from him, why the Department of Interior-Bureau of Land Management can—they’ll be allowed, usually in these places, to go in there and put it up for public bid, and sell it to somebody, and collect a royalty, see. And that of course, is largely

behind the effort, from *their* viewpoint. The agencies are not to be trusted, when they’re dictated to from Washington. Now I have to tell you that as far as the local personnel are concerned in the state of Nevada, Bureau of Land Management people, state director, any director, any director I’ve known, and their assistants, in general, have been very cooperative, and wanted to be cooperative. And they wanted to see things developed in the area. Of course, they’ve had to be under guidance from Washington, D. C., and that’s where the rules are made, far from home.

It’s my view—and I’m gonna say something here that I haven’t pushed real hard, because I haven’t been able to get associations in other states to swallow this line of thinking—but it’s my personal view that the only chance of backfire against the takeover (the thing that’s gonna destroy our ability to develop deposits that’ll make the United States self-sufficient in these various minerals and metals), is to identify those areas that are already known as mining districts, like say in the Francis Church Lincoln report of 1920 or thereabouts—identify the recognized mineral districts. Now, I’m talking especially here about the metallic minerals, not the non-metallics which are so reliant on freight, and they’re usually—well, for instance, limestone deposits; a unique deposit of limestone is locatable. But the limestone deposit that’s sittin’ out here in a remote area, far from being economic, may suddenly become economic because of a new road or something like that, see. And it isn’t a matter of discovering the thing and holding onto it for years, and finding out where the ore body is. That isn’t the problem, see. So that’s why I separate non-metallics, generally from the metallics. And there are very few non-metallics that would really suffer if they were under lease, because the price paid for the non-metallic relates to building homes and

all, and highways, cement, everything else. If a uniform tax is placed on mining limestone or any of the non-metallics, the non-metallics are produced domestically by and large, so any production tax would directly be part of cost to the *domestic* consumer.

But the identification of a deposit of non-metallics that is economical, is not dependent on the same kind of exploration effort and wildcatting that you have in the metallics. And I want to emphasize that. Then I say, that the backfire we can build in this country against the prevention of development of our own resources in the metallic field, would be to identify the mining districts that are *known* to have a potential, and with some liberal boundaries of course, similar to the area of land identified by Francis Church Lincoln, which was less than five percent of the state of Nevada.

Identify those areas, and then make sure that the principles of the 1872 Mining Law are preserved within those districts; because it can be shown that over a period of many years, the rediscoveries or the new discoveries that you hear about are right smack in the old mining districts. And that's gonna go on, in my opinion, for an indefinite period into the future—far enough into the future so we don't know what the discovery techniques will be a few hundred years from now, or a hundred years from now, or even twenty years from now. And if we could get Congress, and we could first get the mining people themselves to see this— and we haven't been able to; partly because of the, I suppose it's partly because most of the highly educated people that've gone on and taken extra theoretical training in mineral exploration and discovery and everything like that, come out of school believing that they're gonna use satellites and indirect methods to make new discoveries where nobody ever thought there was

anything. And so the minute you bring up a proposal like this, oh, my goodness, you're gonna—. Well, I claim, I say that it would be a backfire. You're going to get, definitely going to get restrictions that are gonna be very burdensome and hard to live with. And if we could preserve what we've had, within those mining districts, it'd be a great, big step forward in preserving our ability to maintain a reasonable self-sufficiency within the United States in the metallic minerals.

It's been pointed out and emphasized no end by the attorneys in arguing the point of preserving the right of discovery and all this, and in fighting (which they should be) the lockup of large areas against exploitation and mining, and arguing against that, they've made a great point in the Public Land Law Review Commission report and elsewhere, of the fact that you can't always tell when a block of ground should be classed as mineral. And they point out an acreage over in Arizona somewhere that was on a playa—or I should say a pediment, not a playa—pediment area, covered with gravels and wash, that had been identified as nonmineral in character. And later, it was discovered that there was a big copper ore body under this pediment. And yet, I don't think there's any question if you looked at the vast majority of any such areas that could be talked about, you'd find that they still were within what would've been classed (if you had a mining district identified), it would've been classed as within the mining district. But you don't get that kind of deposits without somewhere in the exposed rocks around it, some kind of evidence of mineral. Okay. Well, I think that that concept of identifying mining districts as a backfire, against blanket adverse regulation, as I said before (and here I am probably coming close to the end of my observations [chuckles]), I think *that* is the reasonable way to try and get

something done. You even work with those that are trying to prevent people from going out and scratching the earth. Because, if you could get that coming from them, saying, "All right, now, those areas that have been identified as mineral in character—in the metallic area—we'll go along, in order to get somethin' done, we'll go along with that in order to get the revision of the mining laws for other areas." Well, they'll have a revision for those areas too, no doubt! But I mean, to preserve the right of discovery, and the ownership in a discovery that's even a rather meager discovery, is essential, very essential; and you've got to hold that as though you're the sole proprietor and you're able to deal with it, you're able to turn the ownership over to different people, and collect money for it, and promote it, and everything, over a period of years (usually) before this turns into a viable, economic operation. And the big flaw in the Public Land Law Review Commission report lies just there, that they did not lay enough emphasis on the fact that most economic, metallic deposits evolve from prospects—the evidence is known for years—it's not economic, it couldn't be said to be marketable for many years, and usually many attempts at doing something with it even follow and tail before ultimate success.

Well, I could cite several cases right here in Nevada, along this line, but of course, that isn't necessarily something we want to try and cover here. But, one outstanding case that's going on right now, I think maybe would be a good example, is Louis Ghibbelini over in Eureka, Nevada. Louis found a manganese showing and did personal work on it, development, way back there in probably '43, 1943 or so. And since that time, he's had at least a dozen different outfits, and most of them responsible outfits with plenty of money, in there working on that, having options to

buy, and having to pay Louis enough to live on while they worked on it, and then they'd give it up for one reason or another.

It finally evolved into being a deposit of vanadium in shale, and occurring over a sizable area and very large tonnages. And he's had several of the major companies have a look at that, do drilling, and then he's preserved the results. Before he had to do the assessment work next time himself, why he'd get somebody else [laughs]. And all this time, it's over thirty years since the initial discovery that those claims have been there and protected, and none of 'em are patented; they're just ordinary locations. And at any time in between people that he got interested at least, a test of those claims would've shown 'em, under the rule of "marketability," to be invalid. And yet it has taken Louis, holding on to these records and promoting them repeatedly to keep that thing stirred up—and the last ones in there, and the ones in there now, and holding, and paying Louis substantial money! I think every six months he gets a nice check, and he doesn't have to work—he or his family. And right now the optionee is Norandex, Noranda Company of Canada, their exploration arm. And they were very enthusiastic about it for a while. And the latest I heard, their enthusiasm is a little cooled off, because of some of the costs that they've run into in trying to process the ore, but they've done substantial metallurgical work on this. Well, one of these days that thing'll get goin'. [Laughs] But that's a typical thing.

And another illustration I might cite is to quote Howard Edwards, a vice president of the Anaconda Company now, and used to be an attorney in Salt Lake City when I knew him very well, and dealt with him in some matters that Combined Metals was working on. Howard Edwards was *there* when

we developed the Spor Mountain beryllium deposits that later on Anaconda took over from us when I was with Combined Metals. And he has put into the Congressional record, or into the hearings rather, on testimony on mining bills, the fact that *all* of Anaconda's mines had come through the small miner or small mining company route, before Anaconda acquired them. There was no property initially discovered by the Anaconda geological force, or their exploration arm that was then operating except one, and that was the Jackpile mine down in New Mexico. They credited the geological department with a discovery. Now their geological department, of course, is there to appraise the things that come to 'em. And properties must be big enough, and far enough exposed and developed, for it to be worthwhile for that big company to say, "Well, this is something for us to pay attention." They can't take on a small mine, and make it pay, no way—any more than the federal government could!

So, this is a whole piece of evidence (and it's somewhat involved) that completely escaped, in my opinion, its importance in the Public Land Law Review Commission study, on public lands. And it's a shame. It's a crime. Because it's a very important factor, and the most important factor that we have, I think, to put over to the general public. And how we're gonna get *that* over to the man in the street—anybody can tell me that, I don't know. The only way that, I think, we have a prayer of getting these people to recognize the importance, is to put it on the basis of what's good for them in their own imagination. And we haven't done a good job of emphasizing the fact that every citizen of the United States, man or woman, has a right to go out there and find something and put his name on it, under this law. And that's the incentive that *did it*;

that's the incentive that found these things. So that's where we're missing the boat.

And people that are most effective today in preserving that right, are not the big companies and not the mining associations, like this Association; it's the small miner group, and they're usually almost frowned on when you talk to one of 'em, because they're so far-out and so violent—a lot of 'em are—that people kinda hate to hear 'em, see 'em coming but the politician listens. So they're the avenue that has—I can tell you that in my opinion, without any question, I have no question in my mind, that the small miner people, the individuals, have prevented us from having a very badly designed alteration of our mining law. And the responsibility for them doing this rests with the politician who doesn't want to be identified as "against the little guy."

Well now I think I've kind've wound up the big "if" in the mining business, and of where we sit now, and if somethin' isn't done about that, you could look back years from now and wonder why there wasn't more development for domestic resources. By that time, it might be too late [laughs].

Well, there're two things then that I've covered. One is, that in the present atmosphere of public opinion, we've got to give something to get something. And if we could get the preservation of all of the essential rights of the 1872 law, within recognized mining districts—and I can tell you that the BLM has identified a lot of areas in the state of Nevada with mineral potentials, some of them overlap or are outside of those districts identified by Lincoln—but if we could get those identified, and preserve the rights within those districts, *instead* of the way it is now: you can have a viable mining claim that doesn't have an exposure of mineral, you know, opened up—it's invalid. That isn't right, because there are



plenty of places where you should be able to project geological inference, and hold the ground, and promote it, and develop it, and drill it. We don't have that. So, I say that there are things even within the mining districts that need to be liberalized under the law. They've *been* liberalized by practice, because the BLM has not come in to test everybody's ground. But, we need to have a law that liberalizes. See. Within those districts. That's number one.

Number two. What was number two? Oh [laughs]. Oh, identification of the mineral districts. And I suppose another thought was to make sure that we don't mix up the habits of the metallic minerals and what's needed to preserve access to them, with the non-metals in general, the general field of non-metals.

Oh, and the other thing in number two that I was mentioning a minute ago, is getting to the rank and file of the public with the idea that every United States citizen has this right. It isn't something that the government's giving away. You know, the big cry is that here we are allowing people to have this without payin' for it! Well, my gosh [laughs], before you get through with most of these discoveries, a *lot* of people have paid plenty for it [laughs], and usually lost, see?

There's another factor too, that I'd like to point out. And I think the Comstock Lode is a very good example of the fact that the production of its gold and silver was vital to the United States government in preserving its monetary viability during the Civil War. And yet most of the production was uneconomic to the people that produced it. But every ounce was just as good when it got to the treasury, whether it was profitable or not. The big profits were made on the stock exchange, not by the operator. There were some of the

operators made fancy money, but not many. And the ones that profited most, were the stock manipulators. Is that bad or not? Well, you aren't gonna go out here and prevent it, any more than you prevent people from pullin' the handle of a slot machine. So.

But the point is, we needed the production. And when the bullion got produced, the ounces of gold and silver went back there, nobody had any stamp on 'em, saying this ounce paid profits to the guy that produced it.

I think that pretty well winds up what I have to say. I get too damned talkative [laughs].





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